



**Australian Government**  
**Department of Education,  
Science and Training**



# Australian Certificate of Education

Exploring a way forward

May 2006

*report*

# **Australian Certificate of Education**

***exploring a way forward***

**Australian Council for Educational Research**

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## Foreword

The desirability of greater consistency in senior secondary arrangements across Australia was discussed by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) in July 2003. The idea of a nationally consistent ‘Australian Certificate of Education’ for the senior years of school was canvassed by the Australian Government in its 2004 discussion paper *Taking Schools to the Next Level*. Later that year, in its election policy for school education *Higher Standards and Values in Schools*, the government indicated its intention to ‘work with State and Territory Ministers to begin the work towards implementing an Australian Certificate of Education’.

In May 2005 the Department of Education, Science and Training commissioned the Australian Council for Educational Research (ACER) to investigate and report on models and implementation arrangements for an Australian Certificate of Education (ACE). In particular, ACER was asked to investigate four options for the introduction of a new certificate.

The current investigation has reviewed existing curriculum, assessment and certification arrangements in the senior years of school in Australia; explored current issues in senior secondary education and examined state and territory responses to these issues; looked at some alternative certification arrangements internationally—including the International Baccalaureate Diploma Program; investigated the use of aptitude tests in the senior years of school; and consulted stakeholders throughout Australia on the four provided options.

The introduction of an Australian Certificate of Education has the potential to provide greater national consistency in senior secondary arrangements; to set nationally consistent high standards; to improve the comparability of student results across Australia; to advance efforts to ensure that all young Australians develop the knowledge and skills required for life and work beyond school; and to establish a national qualification with international standing. Our investigation of options and our recommendations for the introduction of the Certificate assume these fundamental purposes.

We thank all who attended the consultations and made contributions to this investigation. We also thank ACER and DEST staff who worked with us on the project, particularly Giancarlo Savaris, Trish Mercer, Noel Simpson, Juliette Mendelovits, Tom Lumley and Ken Rowe. And finally we thank members of the project Steering Committee (Appendix 7) for their time and valued guidance.

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**Gabrielle Matters**  
**Jim Tognolini**

27 March 2006

## Executive Summary

In May 2005 the Department of Education, Science and Training (DEST) commissioned the Australian Council for Educational Research (ACER) to investigate and report on models and implementation arrangements for an Australian Certificate of Education (ACE) for the final years of secondary school.

A key question in this investigation was whether an Australian Certificate of Education would best be introduced as a new certificate that would sit alongside existing state and territory senior secondary certificates, or whether the objective should be to establish in this country a single Australian Certificate of Education for the final years of secondary school. We have investigated both these possibilities. Within each possibility there are alternative ways of proceeding, and we have investigated and reported on some of the more obvious alternatives.

On balance, we have reached the conclusion that the most desirable long-term outcome would be the emergence of a single Australian Certificate of Education awarded by each of the Australian states and territories in place of the existing nine certificates. We believe the framework of a single senior certificate is more likely to promote consistency in senior secondary arrangements, to provide comparability of student results across Australia, and to ensure nationally consistent high standards of curriculum provision. The addition of a tenth senior certificate is unlikely to address concerns about inconsistencies, lack of comparability and unnecessary duplication among the existing nine certificates or schools' concerns about the likely complications and resource implications of offering yet another senior certificate. A single certificate also is more likely to be consistent with, and to support, the broad purposes of senior secondary schooling than a certificate designed for only some students during these years.

We recognise that achieving a single Australian Certificate of Education may be more difficult than introducing a tenth certificate to sit alongside existing state and territory certificates. A single national certificate inevitably will require time to implement, and may have to be achieved in stages. Nevertheless, we believe the introduction of a single Australian Certificate of Education is a desirable long-term objective, and in the course of our investigations we have explored ways of implementing such a certificate.

A number of considerations have shaped our recommendations. Foremost among these is our belief that the final years of secondary school should provide students with a high quality education that equips them for learning, work and life beyond school. All students stand to benefit from high expectations. Throughout Australia, curricula in the final years of school should be of the highest calibre internationally, and students' levels of achievement should be benchmarked against international standards of excellence.

We also recognise the challenges in providing quality learning experiences for the broad range of students now participating in the final years of secondary school. The keys to increasing student participation and engagement in senior secondary education are quality curricula appropriate to students' talents, interests and needs. For many students, learning now takes place not only in classrooms, but also in workplaces and other community settings. Curriculum and assessment arrangements of the future must be designed to meet the diverse needs of senior secondary students, at the same time keeping open and facilitating pathways to further education, training and work.

Senior secondary arrangements of the future also must allow the development of local curriculum solutions. Diversity of provision, innovation and experimentation will be important not only in meeting local student needs, but also in ensuring continuous improvement in curricula, teaching and learning. An Australian Certificate of Education must provide a framework within which diversity, innovation and local responsiveness are possible and encouraged.

Nevertheless, our analyses of existing senior secondary arrangements have convinced us that many current differences across Australia are difficult to explain or justify. It is clear that present differences between states and territories do not reflect differences in student needs and are not always in students' best interests. In some cases these differences—for example, differences in the ways in which results are reported in different states and territories—may disadvantage some students. Added to this, there is significant duplication of effort across bodies responsible for senior curricula and assessment. It is not difficult to imagine ways in which less duplication and more collaboration could lead to more efficient uses of national resources.

Finally, we believe that any planning for the future must recognise and build on to excellent practices that already exist within the various senior certificates. Any future arrangements must add value to what exists and certainly must not lead to any reduction in quality or standards. It also is important that future arrangements do not impose unnecessary additional demands on students, teachers and schools.

## **Proposal**

Our vision is for a single Australian Certificate of Education, undertaken by senior secondary students throughout Australia and within which students are able to pursue a range of pathways, including academic and vocational studies in schools, workplaces and other community settings. We envisage this national certificate being awarded by all state and territory authorities (the ACACA agencies).

An essential feature of the proposed ACE would be the development of nationally consistent high standards. We are proposing that a national standards body be established to set nationally consistent standards of several kinds. First, the national standards body would set minimum requirements for the award of the Australian Certificate of Education. Second, curriculum



essentials would be established in key subject areas. Curriculum essentials would spell out a core of curriculum content (fundamental knowledge, principles and skills) to be taught in an ACE subject across all awarding bodies offering that subject. We envisage curriculum essentials being established in the first instance for a number of nominated senior school subjects. Third, achievement standards would be set in these nominated subjects. Achievement standards would provide a nationally consistent framework of levels (we are recommending five levels labelled A to E) against which students' performances would be reported, thus allowing results in a subject to be compared across awarding bodies.

Under the Australian Certificate of Education, schools and awarding bodies would be encouraged to develop, assess and report on general skills required for life and work beyond school. The employability skills framework of the Australian Chamber of Commerce and Industry and the Business Council of Australia identifies eight such skills. We are recommending the introduction of a national test of a small number of these skills: initially, reading literacy/verbal reasoning, mathematical literacy/quantitative reasoning, written English and ICT literacy. We are proposing that this component of the ACE be known as the Key Capabilities Assessment (KCA).

Because the Australian Certificate of Education would be a broad certificate available to all students in the senior secondary school, we see value in recognising and rewarding excellence within the ACE. We are proposing the introduction of an ACE Award of Excellence: a certificate awarded to students throughout Australia who meet high standards of achievement in their studies.

The following six recommendations summarise our proposal. These six recommendations are elaborated in Chapters 9 to 14. A proposed implementation timeline is provided in Chapter 13.

## Recommendation 1: Curriculum essentials

A widely held view among participants in our national consultations was that, regardless of where they live in Australia, students in the senior secondary school should have similar opportunities to engage with the fundamental knowledge, principles and ideas that make up school subjects. There was general agreement that students in different states and territories taking particular subjects—such as Economics or Biology—should be able to engage with those subjects in similar depth and with similar academic rigour. Some participants drew attention to disadvantages and inequities that could result from differential access to fundamental learning within a discipline.

We are recommending the identification of curriculum essentials: fundamental knowledge, principles and ideas that should be taught in a subject, regardless of jurisdiction. In the first instance, these essential curriculum elements would be developed for a number of nominated mathematics, English, science and social science/humanities subjects. They would spell out a core of common content to be taught in all states and territories, but would not determine the entire curriculum in a subject and so would not constitute a ‘national curriculum’.

We are recommending that a national ‘subject panel’ comprising subject matter and assessment specialists and members of the relevant professional subject association/s be responsible for identifying essential curriculum content in a subject. This process should include some international benchmarking to ensure that curriculum content is consistent with international best practice in the senior years of school.

### **Recommendation:**

That curriculum essentials be identified—at least in some nominated mathematics, English, science and social science/humanities subjects—to ensure that all Australian students have opportunities to engage with the fundamental knowledge, principles and ideas that make up these disciplines. Essential elements of subject curricula should be identified by national subject panels comprising subject matter and assessment experts and members of the relevant professional subject associations.  
(see Chapter 9)

## Recommendation 2: Achievement standards

At the present time, students' achievements in individual school subjects are not comparable across states and territories. For example, it is not possible to compare levels of achievement in mathematics or levels of proficiency in Japanese from one jurisdiction to another. A score of 85 in Accounting in one state does not necessarily represent the same level of Accounting knowledge as a score of 85 in another state. Added to this, ways of reporting student achievement vary from one state to another. Some students receive scores out of 100; some receive scores out of 50; and still others receive an achievement level (eg, 'Very High Achievement'). Employers sometimes commented that the lack of comparability across jurisdictions and the different systems used to report student achievement complicate the interpretation and use of senior school results.

We are recommending that national achievement standards be developed in those subjects for which curriculum essentials are identified. The purpose of achievement standards would be to provide a common method of reporting achievement in a subject across all states and territories. Our recommendation is that there be five nationally-established standards in each subject, labelled A to E. Each of these standards would represent a described and illustrated level of achievement in the subject and would enable the direct comparison of students' results across states and territories. In states that also report results on numerical scales, there would be an annual task to interpret students' scores in terms of the national achievement standards.

The national subject panel would be responsible for developing achievement standards for a subject. In setting standards, it is desirable that some international benchmarking be undertaken to ensure that high standards (eg, an 'A' in a subject) are broadly consistent with high performance standards internationally.

The development of achievement standards for a subject leaves open the question of how evidence of student achievement is assembled and evaluated. In some jurisdictions, evidence might be assembled at the school level. In other jurisdictions, the evidence also might include results on external examinations. Our proposal also leaves open the possibility of jurisdictions sharing assessment processes and materials. For example, some or all of the examination materials developed for a subject could be shared by states/territories that use external examinations.

### **Recommendation:**

That achievement standards be developed—at least in some nominated English, mathematics, science and social science/humanities subjects—to ensure that students' results in these subjects can be compared throughout Australia. Achievement standards should be benchmarked internationally and could take the form of A to E grades in a subject.

(see Chapter 10)

### Recommendation 3: Key capabilities assessment

The senior years of school have an important role to play in developing the skills and attributes young people need for life and work beyond school. Alongside subject-specific knowledge and skills, senior secondary schools have a responsibility to develop understandings and skills that will prepare young people to function as informed and engaged members of society and productive members of the workforce. Employers, in particular, have an interest in the development of ‘employability’ skills, including skills in communicating and working with others. In our consultations, there was widespread recognition that the final years of school have a crucial role to play in developing general, cross-curricular skills for life and work.

We are recommending that schools and education authorities give priority to developing, and recognising young people’s progress in relation to, the eight employability skills developed by the Australian Chamber of Commerce and Industry and the Business Council of Australia. Further work is required to investigate the most effective ways of assessing and reporting on the eight employability skills. For some skills—such as self management, teamwork, initiative and enterprise, and planning and organising— valid assessments may depend on direct observations and judgments of young people’s performances in workplaces, schools and community settings.

We also are recommending the introduction of national tests of a number of key skills:

- reading literacy/verbal reasoning
- mathematical literacy/quantitative reasoning
- written English
- ICT literacy

The assessment of these ‘key capabilities’ could be administered part way through Year 12; might eventually be expanded to include other skills; and in some states and territories, might replace existing generic skills tests. We envisage students’ results on the Key Capabilities Assessment being reported alongside their subject results.

As well as providing universities and employers with additional information that should be useful in selection decisions, the Key Capabilities Assessment will assist efforts to ensure the comparability of students’ subject results across jurisdictions, and may improve the equating of ENTER scores.

#### **Recommendation:**

That, as part of the Australian Certificate of Education, all students undertake a national Key Capabilities Assessment part way through Year 12. This assessment would provide information about a number of capabilities important to life and work beyond school. Students’ results on the Key Capabilities Assessment would be reported alongside their subject results.  
(see Chapter 11)

## **Recommendation 4: ACE award of excellence**

An Australian Certificate of Education must meet two basic purposes: it must provide a wide variety of courses and learning opportunities to meet the diverse needs of the growing number of students now participating in the final years of secondary school, and it must encourage and recognise excellence in student achievement at the highest international standards.

To support the second of these two purposes we are recommending that the Australian Minister for Education, Science and Training provide an annual ACE Award of Excellence to students who meet high standards in their school subjects and in the Key Capabilities Assessment. State and Territory authorities would identify students in each jurisdiction meeting these nationally specified high standards. We envisage perhaps 10 per cent of all students receiving an ACE Award of Excellence.

We also are recommending that the current Australian Students Prize, provided to 500 students annually by the Australian Government, be awarded as the 'ACE Prize' to students achieving outstanding results in the Australian Certificate of Education. As at present, ACE Prize recipients would be identified by state and territory authorities.

### **Recommendation:**

That an ACE Award of Excellence be introduced. This Award would be issued by the Australian Minister for Education, Science and Training to students who meet international standards of excellence in their school subjects and on the Key Capabilities Assessment. (see Chapter 12)

## **Recommendation 5: A national standards body**

The identification of essential curriculum content for nominated ACE subjects, the development of nationally consistent achievement standards, and the annual development and administration of the Key Capabilities Assessment would require a level of national coordination. It is desirable that a single national body take responsibility for coordinating national consistency and comparability in senior secondary arrangements and for setting standards for the Australian Certificate of Education.

We are recommending that a national standards body be established for this purpose. The Board of Directors of the national standards body would be appointed by the Australian Government Minister for Education, Science and Training. Ideally the work of the national standards body would be funded by all Australian governments.

The national standards body would not award the Australian Certificate of Education (this would be the responsibility of each of the state and territory authorities), but would be responsible for establishing, convening and overseeing the work of national subject panels in nominated school subjects. Each subject panel would propose essential curriculum content and achievement standards for a subject, for endorsement by the Board. The national standards body also would manage the annual development and administration of the Key Capabilities Assessment and prepare and distribute the ACE Award of Excellence to students identified by state/territory authorities.

### **Recommendation:**

That a national standards body be established. This body would not be an awarding body, but would be responsible for identifying essential curriculum content in nominated school subjects, developing achievement standards and managing the annual Key Capabilities Assessment. (see Chapter 13)

## **Recommendation 6: A common national certificate**

There was considerable support among participants in our national consultations for the idea that there should be a single qualification in the final years of secondary school, to be known as the Australian Certificate of Education. Supporters of this idea envisaged an ACE eventually replacing the existing state and territory certificates (eg, Tasmanian Certificate of Education; NSW Higher School Certificate) and being provided through seven or eight awarding bodies (eg, Tasmanian Qualifications Authority; NSW Board of Studies).

We believe it is desirable that, following agreement to incorporate essential curriculum content, to report against common achievement standards in nominated subjects and to incorporate the Key Capabilities Assessment, each of the existing state certificates become the Australian Certificate of Education. Under this scenario, each awarding body would continue to offer or accredit a variety of subjects and courses that would count towards the Australian Certificate of Education. In other words, there would continue to be diversity and responsiveness to local needs—under the umbrella of a single national qualification.

The introduction of a single Australian Certificate of Education would provide an opportunity not only to achieve greater consistency of senior secondary arrangements across Australian awarding bodies, but also to make more efficient use of limited resources. For example, with all awarding bodies issuing the Australian Certificate of Education, it could be decided that, rather than developing seven separate syllabuses/curriculum frameworks for a particular subject, it would be more efficient for awarding bodies to share some syllabus and assessment materials.

### **Recommendation:**

That all students in the final years of secondary school be given access to the Australian Certificate of Education. Following agreement to incorporate essential curriculum content in nominated subjects, to report against common achievement standards, and to incorporate the Key Capabilities Assessment, each of the existing senior secondary certificates would be eligible to become the Australian Certificate of Education.

(see Chapter 14)

## Part I. Background

The final years of secondary education are a crucial period in young people's lives as they prepare for, and begin to make, transitions into further study, training, employment and adult life. The challenge for schools and education agencies responsible for student learning in the final years of school is to provide all young people with the best possible preparation for a range of post-school destinations.

This challenge includes providing tertiary-bound students with a sound preparation in the disciplines that underpin tertiary study. Australia's future economic prosperity depends on high level expertise and innovation in areas such as engineering, technology, science, economics and mathematics, and senior secondary schools have a crucial role to play in laying the foundations for Australian excellence in these and many other fields.

But the challenge confronting senior secondary schooling is also much larger than preparing students for tertiary study. As Australia moves in the direction of near universal participation in the final years of school, the challenge to education authorities is to provide learning experiences to meet the needs of a generation of Australians who will work across the entire employment spectrum. Schools and education authorities have a responsibility to ensure that all young people leave school having mastered the basics of reading, writing and numeracy and with an adequate level of ICT literacy. They also have a responsibility to ensure that young people leave school with the understandings and skills necessary to function as engaged and active citizens, and with skills and experiences relevant to workplaces (eg, the ability to work in teams, to communicate, to plan and organise activities, and to self manage).

A further challenge for schools and education authorities is to provide and encourage high quality vocational learning. Given the significant skill shortages in some areas of the Australian workforce, education agencies have a responsibility to ensure that young people are supported and encouraged to enter a wide variety of trades and other vocations, and are given access to high quality education and training opportunities to prepare them for these occupations. Over the past decade, vocational learning and vocational qualifications have become an increasingly important part of the senior secondary landscape.

At the same time, trends in the higher education sector to admit students to vocational courses such as medicine after the completion of general undergraduate degrees are likely to have implications for future senior secondary curricula and university admissions processes.

The eight state and territory authorities responsible for senior secondary certification are addressing these challenges through nine separate senior certificates and their supporting curriculum, assessment and certification arrangements. Some large states are able to devote considerable resources to the development and provision of senior school syllabuses, examinations and



assessment processes. Smaller systems, on the other hand, generally are unable to support extensive syllabus and assessment/examination development.

With constitutional responsibility for school education residing with the states and territories, each of the eight jurisdictions has developed its own set of senior secondary arrangements over many years. A consequence is that there has been considerable divergence across Australia in such matters as the minimum requirements for the award of senior certificates, the level of detail provided in syllabuses and curriculum frameworks, and in state and territory approaches to assessing and reporting student results. There are now many inconsistencies in senior secondary arrangements—including in terminology—creating difficulties for students and families moving between jurisdictions. It is impossible to compare results in individual school subjects (eg, Accounting) from one state to another, and there is considerable duplication of effort across the eight authorities and nine certificates.

Understandably, the focus of individual state and territory authorities has been on meeting the challenges now facing senior secondary education, negotiating arrangements with local communities, ensuring continuous improvement, and managing the annual cycle of syllabus/curriculum review, examinations and certification. In this context, questions of national consistency, comparability, and duplication of effort generally have been of secondary significance. Nevertheless, over the past decade, agencies responsible for senior secondary certification have made progress in developing more nationally consistent approaches to some aspects of senior secondary education.

# 1 Challenges in senior secondary schooling

At the present time, Australian schools and education authorities are addressing a number of challenges in relation to the senior years of school. These challenges include increasing the proportion of the age cohort participating in the final years of school; meeting the diverse talents, needs and interests of students now involved in this phase of schooling; providing multiple pathways to higher education, training and work; ensuring that students develop a range of general skills necessary for life and work beyond school; and providing curricula and learning opportunities of the highest standards internationally. A further challenge is to address all these objectives simultaneously: for example, to ensure that efforts to meet the needs of the broad range of students now participating in the senior years of school do not lead to a reduction in the quality and rigour of courses that provide the foundations for university study.

## 1.1 Encouraging participation

Increased participation in the senior years of school is recognised as important to achieving the higher levels of knowledge and skill that will be required of the future Australian workforce. A more skilled workforce will be an important determinant of Australia's future economic competitiveness and, at the individual level, participation in senior secondary education is likely to continue to be an important determinant of employment opportunities. As Fullarton et al (2003) note, young people who complete Year 12 or its vocational equivalent currently are more likely to continue their involvement in education and training, gain employment-related skills, and generally fare better in the labour market. And there is clear research evidence that early school leaving can reinforce disadvantage.

All governments in Australia are working to ensure that young people remain longer in education or training. Various initiatives have been introduced to increase the numbers of students continuing to Years 11 and 12, to retain students to the end of Year 12, and to support young people in making successful transitions into further education, training or work.

There has been a significant increase in participation rates over the past 25 years (Ainley, 1998). In 1980, only 38 per cent of young people stayed at school into the final year. The participation rate rose to a highpoint of 77 per cent in 1992 and has been in excess of 70 per cent in recent years. Although more young people are staying on into the final years of secondary school, there is a 'retention problem' across all states and territories. Some governments have set targets to address this problem. For example, Queensland is committed to increasing the number of young people who complete Year 12 or its equivalent from 68 per cent to 88 per cent by the year 2010.

## 1.2 Meeting diverse needs

With a significant majority of young people now staying on at school, schools and education systems face a challenge in meeting the learning needs of this more diverse population of senior school students.

In general, the likelihood of young people participating in the senior secondary years, remaining engaged, and completing Year 12 depends on the extent to which they perceive the school curriculum to be relevant to their interests and aspirations. As (Tomlinson, 2004) noted, the senior years must provide young people with access to, and success in, a curriculum that delivers clear benefits in the form of increased chances of being able to pursue desired employment, education and training. In the Australian context, Edwards (2005) observes:

An increasing number of students in senior secondary education come from homes where unemployment or casual employment and welfare dependency are the norm. Many of these students have experienced the compulsory years of schooling as lessons in failure. They have not been able to connect their experiences of school with a positive sense of achievement... more schooling will not benefit disadvantaged young people unless it is made relevant to their needs and their aspirations and builds on what they already know and can do. (Edwards, 2005, p.3)

This challenge has been taken up in recent reviews of senior secondary schooling and in reforms to senior secondary arrangements, including the introduction of the Victorian Certificate of Applied Learning, the new Western Australian Certificate of Education, the proposed Queensland Certificate of Education and the review of the South Australian Certificate of Education.

These reviews and reforms have seen diversity and choice as keys to ensuring relevance of learning in the senior years. An attempt is being made to provide young people with a broad range of curriculum options delivered in settings appropriate to their needs and preferred modes and places of learning, including schools, workplaces and community settings. Increasingly, schools are being networked into a wider range of learning resources within their local communities, including business and community organisations and other education and training providers (Henry & Grundy, 2003). Senior certificates now recognise different kinds of learning and new forms of assessment are being introduced to allow students to demonstrate their achievements in different ways.

The new Queensland Certificate of Education proposes to allow a broad range of learning to count towards the Certificate. This is seen as a key strategy to engage more young people in learning. The QCE will allow:

- young people to tailor a learning program to meet their skills, needs and ambitions;
- schools to offer programs that meet the diverse learning needs arising from the increased number of young people staying at school and the different post-school destinations they have in mind;

- new courses of study that forge stronger links with VET and employment, and that complement pathways to university;
- new areas of learning, such as workplace, community and self-directed projects, and structured workplace learning, that give all young people opportunities to achieve;
- recognition of skills, such as employability and lifelong learning skills, that increase the value of academic and specific vocational skills; and
- learning achievement to be transferred from other states and overseas.

(Queensland Studies Authority, 2005)

As schools and education systems have introduced flexibility in what, where and how students learn, new cooperative arrangements have been developed between local schools, employers and other learning providers. These arrangements include the Futures Connect program in South Australia and District Youth Achievement Plans in Queensland.

A challenge in meeting the diverse needs of young people now participating in the senior secondary years has been to ensure relevance and engagement as well as high standards and rigour. Schools and education systems have experimented with a variety of arrangements to address the needs of young people who become disengaged from more traditional senior school curricula. VET in schools courses are now provided throughout Australia, although approaches vary from state to state and in some places VET subjects have been developed as minimal departures from traditional school subjects.

### **1.3 Providing pathways**

The senior years of schooling are an important transitional phase from school to work, further education or training. During this phase, young people make choices about desired post-school destinations and the learning they should pursue to maximise their chances of achieving their post-school objectives.

In recent years, schools have paid considerable attention to the development of alternative but flexible pathways to post-school destinations. In all states and territories other than Victoria, students pursue academic and vocational pathways within the same senior certificate. In Victoria, the Victorian Certificate of Applied Learning (VCAL) has been introduced as an alternative to the Victorian Certification of Education (VCE). The VCAL is designed for students interested in going on to training at TAFE, undertaking an apprenticeship, or entering the workforce upon leaving school. This certificate provides young people with practical, hands-on experience, as well as building literacy and numeracy skills and personal and work-related skills. To facilitate transfer between pathways, VCAL units (at Intermediate and Senior level) can be counted towards the VCE.

New relationships between education providers are being built to facilitate student pathways between schools, VET and universities. These pathways go beyond traditional articulation arrangements and are blurring the boundaries between sectors. The incorporation of vocational qualifications into senior secondary arrangements and the ability of senior secondary students to

undertake university studies while at school are examples of this blurring of boundaries.

Senior secondary certificates continue to be the primary basis of selection for students applying for university entrance directly from school. But Australian senior certificates no longer are designed primarily for university-bound students. They are better conceptualised as broad certificates that document different kinds of learning in schools, workplaces and community settings by young people pursuing a variety of learning pathways. This feature of senior certificates is reflected in all recent reviews of senior secondary education.

Nevertheless, the subjects students choose in the final years of school can have a significant influence on the educational and career options available to them after finishing school (Thomson, 2005). Students tend to select clusters of subjects such as mathematics-physical sciences subjects; humanities and social science subjects; manual skills subjects; and technical and applied studies, although in recent years, there has been an increase in the number of students taking subjects with no obvious area of specialisation (Ainley et al., 1994; Fullarton et al., 2003). Some subject clusters, especially service-clerical vocational, mixed eclectic courses, and visual and performing arts courses provide relatively poor pathways to further education and training.

## **1.4 Preparing young people for life beyond school**

Successful transitions from the senior secondary school into education, training and work are likely to be facilitated by the development of personal attributes and vocational skills important to life and work beyond school. In 2000 MCEETYA identified vocational learning as a way of supporting transitions to a broad range of post school options when built on strategic partnerships between schools, business, industry and the wider community.

As Hager et al (2002) note, at the same time as business and employers are calling for more emphasis on generic skills, so too are educational providers. The Victorian Learning and Employment Skills Commission (2003) called for the development in the senior years of schooling not only of vocationally focused skills, but also of ‘strong generic skills and a positive orientation to lifelong learning’. These skills are considered important for all students during the senior years.

Foremost among generic skills are the ability to read and write for a range of purposes and basic numeracy skills. These skills usually are considered essential to effective functioning in adult society, both in workplaces and more generally. These skills also are important to ongoing learning as an adult.

The Employability Skills Framework developed by the Australian Chamber of Commerce and Industry and the Business Council of Australia identifies eight generic employability skills. These skills, which have been endorsed by MCEETYA, are:

- Communication;
- Teamwork;
- Problem Solving;
- Initiative and Enterprise;
- Planning and Organising;
- Self Management;
- Learning Skills; and
- Technology Skills.

In addition to these general employability skills, some employers have expressed an interest in seeing skills in enterprise education developed in schools and in the development of personal attributes important in the workplace.

## **1.5 Promoting quality learning**

An ongoing challenge in senior secondary schooling is to ensure that all students have access to high quality curricula and are assessed against high expectations of their learning. The development of alternative senior school courses, the possibility of learning in a range of contexts beyond the school, and a greater emphasis on vocational learning and the development of generic skills for life and work should not lead to a reduction in standards and expectations. All students participating in the senior years of school should be challenged by engaging and rigorous curricula and have their achievements assessed against high expectations.

Authorities responsible for senior school curricula have established processes for developing and accrediting courses. However, the content of senior curricula continues to be the subject of debate. Recent concerns have been expressed about the academic rigour of some alternative school subjects, the breadth and quality of the literature studied in some Year 12 English courses, and the content of senior mathematics syllabuses. The curriculum in the senior years of school is inevitably contested and the challenge for schools and education authorities is to balance competing demands in the best interests of students and their learning.

Education authorities also set the standards against which student performance is assessed and reported. In some states these standards take the form of described levels of achievement (eg, 'Band 6' in NSW; 'Very High Achievement' in QLD). In other states, student achievement is reported as a mark out of 50 or a mark out of 100. Concerns sometimes are expressed about the levels of achievement expected of students (eg, the standard required to 'pass' sometimes is considered too low). A challenge for education authorities is to ensure that the standards against which student achievement is reported are challenging but realistic, and reasonably consistent across subjects and from one year to the next. A further challenge is to ensure that achievement standards are understood by users of senior certificates.

## **1.6 Ensuring continuous improvement**

Senior secondary arrangements in Australia are under continuous review in an attempt to ensure that they meet the needs of young people in this phase of their schooling. All states and territories conduct occasional major reviews of their senior secondary arrangements. The reports of external review committees often set directions for significant changes to certification, curriculum and assessment arrangements. Examples include the recommendations of the Radford Committee in Queensland in 1970 and the McGaw Review in New South Wales in 1997.

Major reforms of curricula and assessment in senior secondary education have been difficult to achieve in Australia, in part because of the traditional influence that universities have exerted over senior secondary arrangements, and in part due to an inherent conservatism in parental and community expectations. Changes to existing arrangements tend to have been made incrementally and only after extensive consultation and with widespread community support. Whether or not they would be desirable, major changes to current arrangements would be difficult for most systems to contemplate. For example, it would be difficult to incorporate into most state certificates the IB Diploma's breadth of study requirement, a cross-curricular Theory of Knowledge component, an Extended Essay or compulsory community service (see Chapter 6). It also would be difficult for most systems to move away from a traditional discipline-based approach to curriculum provision (for example, to introduce approaches to science learning that are not based on separate chemistry, physics, biology and earth sciences subjects).

Nevertheless, all states and territories recognise the importance of reviewing and reforming senior secondary curricula to provide relevant and high quality learning experiences for all students. Continuous improvement in senior secondary provision is an ongoing challenge for Australian schools and education authorities.

## **2 Responses to current challenges**

Australian education authorities responsible for senior secondary curricula, assessment and certification are grappling with the challenge of providing all young people now participating in this phase of schooling with high quality, engaging and relevant learning experiences. This chapter reviews some of the approaches and initiatives that have been adopted in Australian states and territories in response to this challenge. A more detailed analysis and comparison of senior secondary arrangements in each state and territory is provided in Appendix 8.

### **2.1 Valuing different kinds of learning**

As noted in Chapter 1, a goal of governments across Australia is to increase the proportion of young people participating in the final years of school and completing secondary education. All education systems recognise that the achievement of this goal will depend on providing learning experiences that are challenging and relevant to the diverse needs, interests and abilities of young people in this phase of schooling. With only a minority of young people now aspiring to enter university directly from Year 12, preparation for tertiary study has ceased to be the primary purpose of senior secondary schooling. The nature of this phase of education has changed and will continue to change into the future.

As senior secondary education has changed, so too have the nature and purpose of the senior certificate. Certificates awarded to participants in the final years of school are now records of learning and achievement in a wide variety of courses and in a range of different contexts. Some of this learning occurs in schools, some in workplaces, and some in other community settings. Some learning occurs in traditional courses and disciplines; other learning occurs in vocational courses and leads to the award of vocational qualifications.

A challenge for education authorities has been to broaden offerings and contexts for learning and to incorporate more vocational learning while maintaining high standards and expectations for student achievement. A particular challenge has been to raise the status of vocational learning so that it is seen not as inferior to general/academic learning, but as challenging and valued in its own right. Most authorities attempt to do this through the award of a single senior certificate that allows young people to choose from a wide variety of courses, including general/academic subjects and vocational subjects. But concerns have been expressed that attempts to incorporate very different kinds of subjects and learning into the same senior certificates may undervalue the nature of vocational learning by trying to make VET subjects fit an academic mould.

In Victoria, a second certificate, the Victorian Certificate of Applied Learning (VCAL), has been introduced for young people intending to go on to training



or TAFE, undertake an apprenticeship, or enter the workforce directly. The rationale given for the introduction of the VCAL is that applied learning is more likely to be valued and pursued if it is separated and recognised as being different from traditional academic/general learning. However, most systems have moved away from multiple senior certificates, believing that this practice inevitably creates higher and lower status qualifications.

As a result, there are currently nine senior certificates, as listed in Table 2.1.

Table 2.1

*Current Senior Certificates*

ACT	ACT Year 12 Certificate
NSW	Higher School Certificate
NT	Northern Territory Certificate of Education <sup>1</sup>
QLD	Senior Certificate <sup>2</sup>
SA	The South Australian Certificate of Education <sup>3</sup>
TAS	Tasmanian Certificate of Education
VIC	Victorian Certificate of Education
	Victorian Certificate of Applied Learning
WA	Western Australian Certificate of Education

These certificates may be accompanied by a statement of student results (known variously as a statement of attainment, record of achievement, or testamur). Certificates and/or statements of results provide the formal, codified record of a student's achievements.

The agencies responsible for these senior secondary certificates are known collectively as the Australasian Curriculum Assessment Certification Authorities (ACACA). This body is made up of the chief executives of the statutory bodies in the Australian States and Territories and in New Zealand.

## 2.2 Broadening curriculum offerings

In an attempt to meet the varying learning needs of students, most ACACA agencies have broadened the range of courses on offer in recent years. In most systems students are now able to choose from a very large number of available general/academic and vocational subjects.

There are very few constraints on the combinations of subjects that students can take. For example, no jurisdiction has a breadth of study requirement of the kind found in the International Baccalaureate Diploma program, and with the exception of English, there are very few subject requirements at all. The absence of constraints is seen as a way of allowing students to assemble courses of study matched to their individual interests and aspirations.

<sup>1</sup> based on procedures of the Senior Secondary Assessment Board of South Australia

<sup>2</sup> to be replaced by the *Queensland Certificate of Education* in 2008

<sup>3</sup> currently under review

Some subjects such as mathematics are offered at more than one level (eg, General and Advanced), again with the intention of allowing students to choose courses matched to their interests and abilities.

While some education authorities develop and provide subject syllabuses that specify curriculum content and topics of study, others provide only broad course ‘frameworks’ or curriculum ‘statements’ within which schools develop their own curricula. The result is that in some systems (such as the ACT) there can be many different subject curricula developed within an overarching framework. Some systems also allow schools to develop and propose for accreditation school-based courses in other areas of study.

The most extreme broadening of the curriculum probably is embodied in the notion of a ‘credit matrix’ that allows students to choose from an extensive set of accredited subjects. This system allows students to accumulate credit points for undertaking subjects. For example, in the Queensland Certificate of Education, students will be able to accumulate credit points not only for traditional Queensland senior school subjects, but also for accredited courses offered by a range of providers, including schools, TAFE colleges, universities, the International Baccalaureate Organisation and ACACA agencies in other states and territories.

Table 2.2 shows the variety of senior subjects able to be used in the calculation of a tertiary entrance rank (TER). These are ordered so that subjects with the same name in all states are at the top of the table. The table does not include the very large number of non-TE subjects taken across Australia. It also does not include languages other than English and Australian Indigenous languages (eg, Victoria offers 48 foreign languages).

In some states, students can undertake training in nationally recognised qualifications and receive a direct contribution to their TE score. Queensland has had VET modules embedded in general subjects since the government policy of 1995 for convergence of general and vocational education. And South Australia offers 13 VET subjects, but students are able to count only one VET subject in their TER.

## **2.3 Broadening assessment processes**

As the learning experiences available to students in the senior secondary school have been broadened, it has been necessary also to broaden the variety of ways in which evidence of student achievement and progress is assembled and evaluated. The use of varied assessment methods is not new, even in traditional senior school subjects. As well as being assessed on paper and pen tests and examinations, students traditionally have been assessed on projects undertaken as part of their courses; on performances (eg, dance, drama, instrumental music, physical education, spoken language); the products of their work (eg, sculptures, computer programs, items made of wood, metal, ceramics, food, textiles, etc); and collections or portfolios of work assembled over a period of time (eg, essays, drawings, paintings, assignments, tests, etc).

Table 2.2  
*Subjects that count towards the TER*

NSW	TAS	QLD	VIC	SA	WA	ACT
Chemistry	Chemistry	Chemistry	Chemistry	Chemistry	Chemistry	Chemistry
Economics	Economics	Economics	Economics	Economics	Economics	Economics
Physics		Physics	Physics	Physics	Physics	Physics
Biology	Biology	Biological Science	Biology	Biology	Biological Sciences Human Biological Sciences	Biology
Accounting	Accounting	Accounting	Accounting	Accounting Studies	Accounting & Finance	Accounting
Geography	Geography	Geography	Geography	Geography Studies (Geography)	Geography	Geography
Studies of Religion I Studies of Religion II	Religion & Philosophy	Study of Religion	Religion & Society Texts & Traditions	Studies of Religion (Religions in Australia)	Religion & Life	Religious Studies
Dance	Dance	Dance	Dance	Dance Studies (Dance)	Dance	Performing Arts
Drama	Drama	Drama	Drama	Drama Studies (Drama)	Drama	Performing Arts
		Film & TV	Theatre Studies			
Legal Studies	Legal Studies	Legal Studies	Legal Studies	Legal Studies (Justice & Society: 3) Australian & International Politics	Politics & Law	Legal Studies & Political Studies
		Political Studies	Political Studies			
English (Standard) English (Advanced)	English – Studies	English	English/ESL	English Studies	English	English
English Extension 1 English Extension 2	English – Communications	English Extension – Literature		ESL Studies (ESL)	ESL/Dialect	
	English – Writing		English Language			
ESL	ESL		English Literature	(English Communication)  Communication for the Hearing Impaired	Australian Indigenous Languages	
General Mathematics	Mathematics – Applied	Mathematics A	Mathematics – Further	Mathematics Methods (Mathematics Applications) Mathematics Specialist	Mathematics – Chance & Data	Mathematics (x subjects)
Mathematics	Mathematics – Specialised	Mathematics B	Mathematics – Mathematical Methods		Mathematics – Number & Change	
Mathematics Extension 1	Mathematics – Methods	Mathematics C	Mathematics – Mathematical Methods (CAS) Pilot Study Mathematics – Specialist Mathematics		Mathematics – Space & Movement	
Mathematics Extension 2		Logic				
Agriculture		Agricultural Science	Agricultural & Horticultural Studies	Agricultural & Horticultural Science (Agriculture & Horticulture: 4)	Agriculture	Agriculture & Horticulture

Table 2.2  
(continued)

NSW	TAS	QLD	VIC	SA	WA	ACT
Business Studies		Business Organisation & Management Business Communication & Technologies	Business Management	Business Studies	Business Management & Enterprise	Business Studies  Administration Studies
Ancient History Modern History History Extension	Ancient Civilisations Modern World History Australian Studies  Australia in Asia & the Pacific	Ancient History  Modern History	   History: Australian History History: Renaissance Italy History: Revolutions	Classical Studies  Modern History  Australian History	   History: Ancient & Modern	   History
Aboriginal Studies		Aboriginal & Torres Strait Islander Studies		Aboriginal Studies	Aboriginal & Intercultural Studies	
Food Technology	Food Studies	 Hospitality Studies	Food & Technology	 Tourism	Food Science & Technology	Food & Resource Management Tourism & Hospitality
Earth & Environmental Science	Environmental Science	  Earth Science	Environmental Science  Outdoor & Environmental Studies	  Geology	Text Traditions & Cultures  Recreational & Environmental Studies Earth & Environmental Science	  Outdoor Education  Earth Science
Information Processes & Technology	Information Systems	Information Processing & Technology  Information Technology Systems	IT: Information Processing & Management  IT: Information Systems	Information Technology Studies (Information Technology)	Applied Information Technology	Information Studies
Music1  Music 2  Music Extension	Music  Music (Solo Performance)  Performance	Music  Music Extension (Performance)	Music Styles  Music Performance: Group Music Performance: Solo	Music: 8	Music	Music
Society & Culture	Sociology	Study of Society	Classical Societies & Cultures  Contemporary Australian Society	Studies of Societies		Contemporary Transitions
Community & Family Studies		Futures Home Economics	International Studies	Women's Studies  Home Economics: 4	  Children, Family & the Community	
Senior Science	Physical Sciences  Science of Natural Resources	Multi-Strand Science Marine Science  Physical Education	  Physical Education	  Physical Education	Integrated Science Marine & Maritime Technology Physical Education Studies	General Science   Physical Education

Table 2.2  
(continued)

NSW	TAS	QLD	VIC	SA	WA	ACT
Personal Development, Health & Physical Education	Sport Science			Nutrition		
	Health Studies	Health Education	Health & Human Development	(Health Education: 3)	Health Studies	
	Psychology		Psychology	Psychology	Career & Enterprise Psychology	Transition Education Theory of Knowledge
			Philosophy	Philosophy	Philosophy & Ethics	
			Media		Media Production & Analysis	Media
Visual Arts		Visual Art	Art	Visual Arts Studies (Art Practical) (Craft Practical) (Design Practical)	Visual Arts	
	Art, Craft & Design – Appreciation				Visual Communication Design	Art & Design
Textiles & Design	Art, Craft & Design – Production		Visual Communication & Design			Fashion & Textiles
Software Design & Development	Computer Graphics & Design		Design & Technology		Computer Science	Photography and Digital Editing
	Computer Science					
Industrial Technology	Audio Design	Technology Studies	Studio Arts	Design & Technology Studies (Design & Technology: 6)	Materials Design & Technology	Design and Technology
Design & Technology	Design Graphics	Graphics	Industry & Enterprise Studies			Electro-technology
	Housing & Design					
Engineering Studies	Advanced Electronics	Engineering Technology	Systems & Technology		Engineering Studies Automotive Engineering & Technology Aviation Building & Construction	Automotive Technology
VET: Business Services; Construction; Entertainment Industry; Hospitality; IT; Metal & Engineering; Primary Industries; Retail; Tourism			VET: Business Dance Community Services Electronics Equine Industry Financial Services Furnishing Hospitality IT Laboratory Skills Multimedia Music Industry	VET: Broadcasting & Multimedia; Business Services; Community Services; Financial Services; Hospitality; IT; Laboratory Operations; Manufacturing & Engineering; Retail; Seafood Operations; Sport & Recreation; Tourism Operations		

However, with a more diverse cohort of students participating in senior secondary education, efforts have been made to recognise a still wider variety of student achievements and to broaden the kinds of evidence accepted. Observations of performances in workplace settings, involvement in community activities, and engagement in extra-curricular programs provide part of the evidence now used to assess young people's achievements. Greater use is now made of direct observations of student performance in real or simulated settings.

Part of the reason for broadening methods of assessment is the recognition that traditional forms of assessment (eg, paper and pen testing) are of limited usefulness and validity for evaluating performances in workplace and community settings. Another part of the reason is the recognition that, for young people interested in pursuing hands-on, practical learning, traditional forms of assessment can be a disincentive to participation in the senior years of school.

In recent years, Australian education authorities also have encouraged the development and assessment of less subject-specific capabilities such as planning and organising activities, working with others and in teams, and collecting and analysing information. Subject syllabuses and curriculum frameworks often make direct reference to the Mayer Key Competencies (Mayer, 1992) exhorting teachers to ensure that these generic competencies are addressed in the teaching of senior school subjects. Some authorities, such as the Victorian Curriculum and Assessment Authority, have attempted to support teachers in their assessment of general capabilities of this kind (McCurry, 2003).

## **2.4 Providing more informative reports**

Initiatives to encourage and value more varied forms of learning in the senior secondary school and to adopt more varied ways of assessing and recognising young people's achievements have been accompanied by efforts to provide more informative reports of student progress and achievement.

From the point of view of universities, the tertiary entrance rank (TER) continues to be a key piece of information in selecting students directly from school. As a result, the TER is also a key measure of senior secondary success for many students and their families. The TER conveys information about how a student has performed in relation to other Year 12 students. In other words, it is 'norm-referenced'. Year 12 subject results also are sometimes norm-referenced in that they convey only how a student has performed in relation to other students.

With growth in the proportion of senior secondary students not intending to proceed directly to tertiary study, and with an expanding audience for senior secondary reports, including trainers and employers, education authorities have attempted to provide information not only about how students have performed in relation to other students but, more importantly, about what they know,

understand and can do upon leaving school. Reports of this kind are referred to as ‘criterion-’ or ‘standards-’ referenced.

The introduction of vocational courses has promoted more informative reporting. In vocational courses, the focus of assessment and reporting is on what students know and can do. Often a judgement is made about whether a student has met some pre-established performance criterion and so can be considered ‘competent’ in an area of performance.

Most authorities now make an attempt to report student achievement against pre-established performance standards. These standards take the form of described and illustrated levels of achievement in an area of learning. The student report reproduced in Appendix 9 is an example of a standards-referenced report. The report shows five described standards (levels of achievement) in the NSW Higher School Certificate subject Personal Development, Health and Physical Education.

Traditionally, reporting in the senior secondary school has been focused on conveying students’ achievements at the point of exit from Year 12. But learning during the final years of school is a continuous process that builds on to learning in the earlier years of school and provides a starting point for future learning. Questions being addressed by senior secondary authorities include:

- What is the best way to record and acknowledge the achievements of students who leave part way through the senior years?
- What can be done to assist teachers and students to map and monitor progress during Years 11 and 12 (as in the West Australian Certificate of Education)?
- Should young people be able to complete certificate requirements after they leave school (as in the Queensland Certificate of Education)?
- How might reports of student progress and achievement in the senior years better articulate with reports of achievement in prior and subsequent phases of their education?

## **2.5 Enhancing national consistency**

The ACACA agencies have begun a process of collaboration to explore ways of achieving greater national consistency and comparability. Some of these national collaborative activities are listed below:

- The National Assessment Framework for Languages at Senior Secondary Level (NAFLaSSL) was developed in 1985–2000. This activity was reformulated more broadly as the Common Curriculum and Assessment Framework for Languages (CCAFL) from 2001. Initially for small candidature languages, the framework has now been extended. CCAFL sets out objectives, outcomes, themes and recommended/prescribed texts. Curriculum shells have been developed and each state develops its syllabus documents from these shells. Queensland and the ACT, with wholly internal assessment, do not currently participate in CCAFL.

- In 1995, the ACACA agencies conducted a study of 18 subjects from all eight Key Learning Areas plus vocational education. The report of that study (Mapping the Curriculum in the Final Year of Senior Schooling Across Australia--MCFYSAA) observed that:

One notable and not unexpected feature of MCFYSAA is the extent to which the curriculum documents of school systems show commonality. In no case is the description of the subject entirely or strikingly divergent from what is described in the other systems. There seems to be a broad consensus about what is appropriate and logical for students to study in the final year of schooling—not only in the traditional areas of learning, but also in more innovative areas... The project found the greatest similarity in subjects with a traditional base and where the influence of the university interface was significant. There were also differences in the degree of specification in curriculum documents, depending on their purpose—syllabus or framework.

(McKenny, 2005)

- In 1995, ACACA endorsed Guidelines for Assessment Quality and Equity. Since then, all agencies have worked to expand the types of assessment used in senior secondary education and to improve the fairness of assessment procedures to all students.
- During the 1990s, the ACACA agencies collaborated on a project funded by the Commonwealth to examine Year 12 datasets and to make recommendations for improving the comparability and thus portability of data. The Year 12 Data Comparability Project (1993) and the Data Dictionary Development Project (1995) provided a basis for greater commonality in data definitions across jurisdictions. In February 2005, ACACA agreed on a 12-month commitment to the further development of Guidelines for Data Release and Presentation.
- In 1999, ACACA endorsed Guidelines for the Integrity, Quality and Long-term Credibility of Certificates of Achievement. These guidelines spell out principles for the delivery of quality certificates and provide a basis for greater comparability of certificates across jurisdictions.
- In 2003, ACACA curriculum officers mapped all subjects offered in the senior secondary curriculum across Australia. Of the 48 broad subject areas identified, 23 were offered by all jurisdictions, and a further 12 were offered by all but one jurisdiction. Of 14 VET subjects identified, most were offered by all jurisdictions.
- The ACACA VET group has been investigating the extent to which the agencies may be able to collaborate in developing senior secondary curricula for the implementation of national VET competencies as part of the senior secondary certificate. They have been considering the IT Training Package. To date, they have mapped current IT arrangements in the states and territories and compared nominal hours for commonly offered IT competencies.



## 3 Stakeholder views

Stakeholder views on the concept of an Australian Certificate of Education were sought through national consultations conducted in all Australian capital cities during August and September 2005 (see Appendix 6). This chapter summarises the views expressed in those consultations.

### 3.1 The options paper

An Options Paper was distributed to all invitees prior to each meeting. The paper provided an overview of the four provided options:

#### **Option 1. An alternative certificate**

This option involves the introduction of a new certificate which would sit alongside the existing senior secondary certificates. Schools and students would choose to undertake this certificate in much the same way that some schools and students currently choose to undertake the International Baccalaureate Diploma Program. Under this option, the ACE would be designed to meet the needs of a wide range of students, and to meet the information needs of employers, training institutions and universities.

#### **Option 2. A certificate modelled on the IB Diploma.**

This option is similar to Option 1 but would be modelled on the International Baccalaureate Diploma: an internationally recognised pre-university qualification. Under this option, the ACE would sit alongside the existing senior secondary certificates. Schools and students would choose to undertake the certificate. An ACE modelled on the IB would be developed primarily as preparation for university study.

The general objectives of the IB Diploma Program are to provide students with a balanced education, to facilitate geographic and cultural mobility, and to promote international understanding through a shared academic experience. In particular, the Diploma Program aims to: (i) provide an internationally accepted qualification for entry into higher education; (ii) promote international understanding; (iii) educate the whole person, emphasising intellectual, personal, emotional and social growth; and (iv) develop inquiry and thinking skills, and the capacity to reflect upon and to evaluate actions critically.

#### **Option 3. A certificate that evolves from existing certificates**

Under Option 3, the ACE would not be introduced as a new certificate to sit alongside existing certificates, but would evolve from the eight existing state/territory certificates. This option would involve renaming the existing certificates the ‘Australian Certificate of Education’, meaning that all eligible senior school students would

receive the Australian Certificate of Education rather than the current local certificate (eg, South Australian Certificate of Education). There would thus be eight awarding bodies for the new ACE.

Option 3 would entail a commitment to move towards greater national consistency and comparability of certification requirements and standards over time. The development of more consistent certification requirements and the introduction of common standards would not require the adoption of identical syllabuses and assessment procedures across states and territories.

**Option 4. A certificate based on a scholastic aptitude test**

Option 4 involves the introduction of an Australian Certificate of Education based on a national aptitude test. Under this option, some or all students in their final year of secondary school in Australia would sit the same test. Each eligible student would then receive an Australian Certificate of Education which would record the student's aptitude test results.

This option parallels the use of the Scholastic Aptitude Test (SAT) in the United States. Students in that country sit the SAT at the completion of secondary school and their test results are used in university admissions decisions. The current SAT I (Reasoning Test) measures verbal and mathematical abilities which develop over time; the SAT II (Subject Tests) measure knowledge and skills in English, mathematics, natural sciences, social studies and languages.

### 3.2 Introducing the project

Each consultation began with an overview of the background to the project. Some of the issues identified in the lead-up to the project also were outlined, including:

- the desirability of greater consistency in senior secondary arrangements (eg, certificate requirements, terminology);
- the desirability of more comparable student results across states and territories;
- the need for clearer and more consistent standards of student achievement;
- the possible international advantages of a single Australian Certificate of Education; and
- the opportunity that an ACE might provide to rethink priorities for learning in the senior years of school.

Discussions tended to be free-ranging. Two questions commonly asked of the project team were: (1) What is the purpose of an Australian Certificate of Education? (sometimes expressed as: What problem is this designed to solve?) and (2) For which group/s of students is the ACE intended?

In response to the first question, reference was made to perceived difficulties arising from inconsistencies in Year 11/12 arrangements across states and territories, including the difficulties faced by families moving between jurisdictions. It was pointed out that concerns also had been expressed about a lack of comparability of student results from one state to another, and questions had been raised about the standards of different certificates.

In response to the second question, it was noted that some of the provided options appeared to be more focused on tertiary-bound students than others. This was particularly true of Options 2 and 4. Options 1 and 3, on the other hand, left open the possibility of the ACE being available and relevant to all students in Years 11 and 12. Thus the answer to the second question appeared not to be fixed, but to depend on the option chosen.

### **3.3 Support for an ACE**

The national consultations revealed widespread support for the idea of an Australian Certificate of Education in the final years of secondary school. There was support for this idea from a number of employers and parents in the consultations, and from a number of university and school-based participants. In all state and territory meetings participants expressed a consistent view of what an ACE might be able to offer: the opportunity to take a national perspective and to use Australia-wide resources and talent to improve learning in the senior secondary school; and the opportunity to improve on what already exists and to rethink curricula for the future.

There was almost universal support for a broad certificate that would address the needs of all students in the senior secondary school rather than a narrow certificate aimed at some subgroup of the student population (eg, those students seeking university entrance)<sup>4</sup>. Such a certificate would meet the educational needs of students by recognising the multiple pathways that students take, encouraging participation, meeting diverse needs, and building life- and work-relevant skills. There was support for flexible assessment processes and appropriate assessments for different types of students.

Concerns were expressed about a potential loss of local responsiveness if an ACE were to result in national ‘standardisation’; a potential distortion of curriculum (‘no curriculum decisions should be made outside Australia’); the danger that the smaller states might be marginalised and unable to develop local solutions to problems; and the possibility of the watering down of standards if all states were to adopt the ‘lowest common denominator’.

These two perspectives (the positive alongside the negative) were most clearly expressed by a number of university representatives: ‘We are the upholders of integrity in education and whatever [is done], there should be no negative impact on standards.’

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<sup>4</sup> A number of participants supported this view by citing statistics on the minority of Year 12 students who go on to university and the significant number of university students who do not come directly from Year 12.

### 3.4 The current context

There was general acknowledgement that current differences in senior secondary arrangements across states and territories are not a reflection of, or a response to, different student needs in different states and territories. Rather, they were seen to reflect the influence of different histories, philosophies, personalities and committees in the various jurisdictions. Although individual agencies have worked to provide arrangements to meet local needs, it was recognised that the outcome of these efforts is that students in different parts of Australia are now exposed to very different certification requirements, terminologies, assessment processes and reporting formats. Most participants found it difficult to see how these differences were in the best interests of students or of employers and others attempting to compare student achievements across jurisdictions.

There was recognition that current arrangements involve significant duplication of effort across jurisdictions and thus represent a lost opportunity to use limited resources to better meet the needs of all Australian students. The development of seven separate syllabuses (eg, in Physics) and their seven associated sets of assessments for essentially the same group of (tertiary bound) students was considered to be an illustration of this duplication of effort. It also was noted that it was not possible to compare levels of student achievement (eg, in Physics) across states and territories.

There was support for more sharing across jurisdictions. For example, in some meetings there was discussion of the possibility of analysing current offerings within a subject area across jurisdictions with a view to reducing duplication, improving comparability of results, greater sharing across awarding bodies, and the identification of unmet student needs in the subject. Some participants pointed to the possibility of developing subjects that could be made available to meet the needs of students regardless of the state or territory in which they lived.

### 3.5 A way forward

Some participants suggested the need for a set of principles (eg, inclusivity; flexibility; common core of learning for all) that could be articulated in a policy framework to underpin the ACE. Such a policy framework could be developed with input from employers and the business community<sup>5</sup>.

In all meetings there was consistent recognition that more could and should be done to achieve consistency (of certificate requirements, terminology, reporting formats, etc) and to achieve greater comparability of student results across jurisdictions. The development of shared achievement standards ('standards

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<sup>5</sup> It was pointed out that countries that have had most success in meeting the needs of all students (eg, Sweden and Denmark) have policy frameworks developed in this way recognising that educators and employers have a mutual obligation for transition.

not standardisation') within subjects was seen as the most feasible way to achieve greater comparability across states and territories.

In all meetings there was some discussion of the opportunity and need to provide more emphasis on the development and assessment of cross-curricular skills and attributes. This discussion originated from two different sources: the idea of an 'aptitude' test such as the Victorian General Achievement Test (GAT) and the current Employability Skills Framework developed by ACCI and the BCA. In a number of meetings, the identification and national assessment of key capabilities were seen as a possible component of an Australian Certificate of Education. While it was recognised that not all skills and attributes can be assessed in a nationally consistent way, there was support from many participants for an assessment of generic skills such as literacy, numeracy, ICT literacy, written English, and interpersonal understanding. ACCI and the BCA expressed the view that if there were to be an assessment of generic skills, then only the employability skills were of interest. It also was noted that some or all of a key capabilities assessment could be useful in establishing improved comparability of subject results and ENTER scores across states and territories.

Some meetings considered steps that would be required to implement an Australian Certificate of Education, including the possibility of establishing a national body responsible for driving greater consistency and comparability and for developing and administering an annual key capabilities assessment.

A number of challenges to the development of an ACE were raised. Some participants argued that jurisdictions would need to let go of 'some preciousness' and see the ACE as being of benefit for all Australian students. Participants representing state departments and ACACA agencies sometimes pointed to the difficulties of re-badging existing certificates referring to such issues as brand recognition and the fact that existing certificates were written into state legislation.

Participants also discussed the need to find the right balance between moving forward with clear timelines and goals (recognising that, if the process is protracted, new arrangements may be out of date by time they are introduced) and being cautious so that there is limited damage to systems and students, and the cost outlays are contained. Some participants pointed out that existing state-based arrangements had been negotiated in detail with local communities and that caution should be exercised in proposing major changes quickly.

In clarifying the end product and the process, participants noted that consideration would need to be given to a range of issues including how student results were to be reported, which stakeholders would be involved in the decision making, and which models (eg the Queensland credit bank) might be investigated. A strong preference was expressed for a reporting model within which students' levels of achievement were described, rather than a vocational education model of competent/not competent; and for conversations to include subject associations, practitioners, universities, teacher training organisations, and business representatives.

### 3.6 Response to options

It was clear from the consultations that there was a strong preference for Option 3 over the other three options. The perceived advantages of Option 3 were that it recognised and built on to the strengths of existing arrangements, including attempts to increase student participation and to provide learning opportunities for the broad range of students now staying on to senior secondary education.

There was very little, if any, support for either Option 1 or Option 2. Participants often said that they were unable to see how the introduction of a new and separate certificate would address concerns about consistency and comparability across existing state and territory certificates. A commonly expressed view was that it made little sense to establish another certificate and its supporting infrastructure as an alternative and competitor to existing state certificates. Another common comment was that it made little sense to establish an Australian Certificate of Education modelled on the IB Diploma when schools already were able to adopt the IB Diploma itself.

A very small number of university representatives saw the possibility of an aptitude test (Option 4) providing an additional piece of information that could be useful for student selection – at least into some faculties. Discussion of Option 4 often led to the discussion of general cross-curricular skills and attributes and ways of encouraging and recognising the development of these skills and attributes in the senior secondary school. Some participants also noted that a general aptitude test could be useful in efforts to establish greater comparability across jurisdictions. An aptitude test might improve the current procedure to establish equivalences of ENTER scores, but also might be useful in comparing subject results across states (in the same way that the GAT is used to compare subject results across Victorian schools).

A number of potentially adverse consequences of Options 1, 2 and 4 were raised. First, there were in-principle concerns about the possibility of two levels of certificate emerging and an eventual hierarchy of certificates if the ACE did not meet the needs of all students. Second, there were equity concerns. It was pointed out that some systems and schools with limited resources could have difficulty offering more than one certificate, and students who now have a reasonable opportunity to go to universities from these systems and schools could be disadvantaged. Schools already faced difficulties in running two streams (eg, VCE and IB). Some participants asked where the decision to offer the ACE would be made: at the sector level, at school level, or by student?

Third, there were concerns about the potential narrowing of the curriculum and the possibility that curriculum could be captured by one philosophy and ‘dumbed down’. Some universities expressed concern that the introduction of a national aptitude test could see this test become a significant element in university selection procedures, replacing or subverting school based information, with a concomitant reduction in levels of student preparation in

academic subjects. Universities were concerned to maintain high levels of subject preparation.

Fourth, several parent representatives noted the need to bring the community behind any change. They expressed concern at the possibility of returning to an entirely exam-based system and at the possibility of ‘political ideology at play to interfere with family life and confuse students and parents’. Options 1, 2 and 4 as alternatives could become even more confusing to many parents who do not understand what happens now.

An extract from the minutes of the NSW Chairs of the Academic Boards is particularly clear in expressing the concerns of the university sector:

In discussion, the Committee noted that, of the three options, 1, 2 and 4 are add-ons to the existing State-based system, and that as such they could be a significant imposition on poorly funded schools. The Committee felt that the resource implications at the school level must be seriously considered. Option 3 (a national certificate which evolves from the existing State and Territory SSCEs) is the only one of the four that does not impose a separate, parallel system on schools.

Further, a national certificate would appear to improve consistency and comparability around Australia, have more international appeal than separate State-based certificates, and improve confidence in standards. It was felt that, even if the process of evolving State-based certificates to a national certificate is not fully realised, the process itself would be beneficial in providing a basis on which the issues can be discussed. Nevertheless, any national certificate must be able to ensure that students can articulate readily into university courses, and while addressing issues of consistency it must also address the issue of the diversity of student needs. One possibility is to have agreement on standards, but flexibility in content. This may be a useful approach, given that state contexts have become hardened over the years. The development of an Australian version of the IB was seen as being counter-productive.

In general, there was greatest support for an Australian Certificate of Education which:

- recognises and builds on to current arrangements;
- is introduced over time;
- is available to all students;
- recognises the multiple pathways that students take; and
- is seen as an attempt to meet the educational needs of students (eg, encouraging participation; meeting the diverse needs of students; providing pathways; encouraging the development of employment-relevant skills and attributes).

## 4 Desirable features of an ACE

Our analyses of general challenges confronting senior secondary education (Chapter 1), existing and planned state/territory senior secondary arrangements (Chapter 2) and feedback from our national consultations (Chapter 3) have led us to the view that, if an Australian Certificate of Education is to be introduced, it should be designed to address a number of objectives. In this chapter we outline seven possible objectives of an ACE. In Chapters 5 to 8 we evaluate the four provided options against these objectives.

### 4.1 Inclusivity

As the proportion of the age cohort participating in the final two years of secondary school has grown, senior certificates have been broadened to cater for the more diverse needs and interests of students in the senior secondary years. Curriculum offerings have been broadened well beyond the traditional academic subjects that once dominated the senior curriculum to include a variety of alternative courses and applied, vocational learning. Students now learn not only in school settings, but also in workplaces and community contexts.

In all states and territories except Victoria, this diversity has been incorporated within a single state/territory certificate. In Victoria, a second certificate, the Victorian Certificate of Applied Learning, has been introduced as a practical, hands-on qualification.

We believe an Australian Certificate of Education should be designed to meet the diverse needs of the majority of students participating in the final years of school, whether they intend to proceed to university, vocational training or employment at the completion of their schooling. It should not be a narrow certificate designed for only some students (eg, providing an academic preparation for university-bound students). We envisage the ACE as a broad, national certificate within which students are able to pursue multiple pathways to a variety of post-school destinations. Both academic and vocational learning would be undertaken within the same certificate. As Tomlinson (2004) notes, this would not mean trying to fit vocational programs into an ‘academic’ mould, but would recognise what is distinctive and valuable about vocational learning and ensuring that it is respected and valued in its own right.

Some students undertaking the ACE would complete most of their learning in schools; other students would complete most of their learning in non-school settings. Subjects would be offered at different levels (eg, general and advanced) for students at different levels of achievement, and courses offered by a number of different providers could be accredited and would count towards the ACE. For example,



advanced students might undertake university subjects which would count towards the ACE and also provide credit towards a university qualification.

## **4.2 High standards for curriculum and achievement**

The concept of a broad certificate that attempts to meet the needs and interests of all students is not antithetical to the setting of high standards for senior secondary curricula and student achievement. We believe an Australian Certificate of Education must set high standards and expectations *as well as* providing different kinds of learning in a range of learning contexts. And these high standards should be nationally consistent. Currently, there is very little information available about the quality of senior secondary curricula in different Australian states or about the levels of attainment expected of, and achieved by, students in different states.

Ideally, an ACE would address two kinds of standards: standards for the curriculum and standards for student achievement.

### **Curriculum Essentials**

In subjects such as Biology and Economics, we are persuaded that there are big ideas, key principles/concepts and fundamental knowledge that all students taking these subjects should have an opportunity to learn, regardless of where they live in Australia. Under an Australian Certificate of Education, a core of essential curriculum content in a subject could be identified without specifying the entire curriculum for the subject.

Essential curriculum content should not be defined in a minimalist way. For example, essential content should not be defined in terms of what is currently common to all state and territory curricula in a subject. Rather, curriculum essentials should be identified by recognised subject matter experts and be benchmarked against quality senior secondary curricula in other countries.

### **Achievement Standards**

An Australian Certificate of Education also should set nationally consistent standards for student achievement. It should be possible to compare levels of student achievement in a subject from one state/territory to another and, ideally, the way in which student results are reported should be common across jurisdictions. At present it is not possible to compare achievement standards across states (eg, to say how a VHA in Chemistry in Queensland compares to a Band 6 in Chemistry in NSW). We believe that, under an Australian Certificate of Education, there should be a common set of achievement standards for a subject. These achievement standards should set high

expectations for student learning and should be benchmarked against expectations in other countries.

An Australian Certificate of Education provides a vehicle for setting and clarifying nationally consistent high standards for senior school curricula and for establishing shared achievement standards against which student performance can be assessed and reported. The need for work to develop nationally consistent standards was recognised by Edwards in his address to the ACACA agencies early in 2005:

The area of standards seems to me to be the most crucial and the most fruitful area for further collaborative work across the ACACA agencies. In part this is a reasonable response to the questions that are being asked by employers, parents and the Commonwealth government. How difficult is it to compare standards across the jurisdictions? Should we not be accountable for the standards of student achievement, not just within our own state or territory, but across the nation?

(Edwards, 2005, p.12)

### **4.3 Greater national consistency**

An objective of an Australian Certificate of Education should be to provide greater national consistency in senior secondary arrangements. Efforts are being made to achieve greater national consistency in the earlier years of school, but in the senior school there are significant inconsistencies across Australia in such matters as:

- terminology relating to curricula, assessment and reporting;
- requirements for the award of the senior certificate;
- what is taught in particular subjects;
- how vocational learning is incorporated;
- how student achievement is assessed; and
- how student results are reported.

The lack of consistency in senior secondary arrangements often is described as a problem for students who move between states during the final years of school. There appears to be support for greater national consistency among groups (eg, Australian Defence Forces families) that make regular interstate moves. Although the proportion of the student population moving between states each year is relatively small (it is estimated that 84 000 students under the age of 15 move between states each year), inconsistencies in curriculum and assessment arrangements and certificate requirements almost certainly create difficulties for students who do move.

More generally, there appears to be a level of community support for greater national consistency in schooling. In the scoping study *Parents' and Community Members' Attitudes to Schooling* (Department of Education Science and Training, 2003) 88.4 per cent of the 1359 parents interviewed supported the introduction of 'national

school qualifications’ and 85.9 per cent supported ‘standard tertiary entrance requirements across Australia’. The parents interviewed in this study were not necessarily the parents of senior school students, but the findings of this study support other evidence that there is community support for more nationally consistent arrangements in relation to education.

There is also some evidence that employers find the different ways of reporting student achievement in different states and territories confusing. The Australian Chamber of Commerce and Industry and the Business Council of Australia have been advocates of greater national consistency in education and training.

An Australian Certificate of Education provides an opportunity to achieve greater national consistency in terminology, in requirements for the award of the senior certificate, in core curriculum content, and in the ways in which students’ achievements are communicated.

#### **4.4 Increased comparability**

Currently, it is not possible to compare achievement in particular school subjects from one state or territory to another. It is not possible to compare achievement in, say, Accounting in NSW with Accounting in Victoria, or achievement in Biology in Queensland with Biology in Western Australia.

There are several issues underpinning this observation. A first is that curricula differ from one state to another meaning that it may not be possible to compare student results meaningfully across states and territories. To the extent that curriculum content is common across jurisdictions, interstate comparisons become more possible. For most senior secondary subjects, the degree of commonality currently is not known.

A second issue is that, even if the curriculum in a subject were identical across Australia, there is no process for comparing students’ subject results from one state to another, except in some languages with very small candidatures. The possibility of comparison depends on a common point of reference: for example, some assessment tasks that are shared across states or a set of achievement standards against which all state results can be mapped.

A third issue is that, even if there were common curriculum content and a point of reference for establishing equivalences of subject results across states, different ways of reporting results are used in different states. In some states results are reported as achievement levels (eg, High Achievement; Very High Achievement); in others, as marks out of 50; and in others as marks out of 100. The direct comparison of student results across jurisdictions would be facilitated by the adoption of a common method of reporting subject results.

For the purposes of university entrance, students' results are aggregated to provide a tertiary entrance rank (known as a UAI, ENTER score or TER). These tertiary entrance ranks are based first on statistical processes within each state to adjust students' subject results for the general abilities of the candidates choosing particular subjects, and then on a statistical process designed to make them comparable across states. Both processes involve assumptions that have been questioned. For example, the interstate process involves an assumption that the distribution of overall student achievement is the same in each state and territory. Nevertheless, students' results generally are considered comparable across jurisdictions at the level of the tertiary entrance rank.

An objective of an Australian Certificate of Education should be to enable standards of student achievement to be compared across states and territories, at least in key English, mathematics, sciences and social sciences subjects. The introduction of an ACE also may provide an opportunity to make improvements to the process currently used to compare tertiary entrance ranks across Australia.

#### **4.5 Reduced duplication**

A feature of Australian senior secondary arrangements is a considerable level of duplication. Each state and territory authority develops syllabuses or curriculum frameworks and examination and/or assessment processes for a large number of senior school subjects. These include: Accounting, Ancient History, Australian History, Biology, Chemistry, Dance, Drama, Economics, English, Geography, Information Technology, Legal Studies, Mathematics, Music, Physical Education, Physics, Religious Studies, Technology and Design, and Visual Arts. For many subjects of this kind, seven separate syllabuses or curriculum frameworks and seven separate examinations and/or assessment processes are developed across Australia. The maintenance of these parallel systems, including the development of annual examinations, is an expensive undertaking, particularly for the smaller states. Scarce resources often are used to replicate syllabuses and examinations for essentially the same group of students: those intending to undertake higher education.

An objective of an Australian Certificate of Education should be to reduce unnecessary duplication across Australia. Under an Australian Certificate of Education, we envisage more sharing of syllabuses, curriculum materials, examinations and assessment processes.

## 4.6 Recognition of general capabilities

The primary focus of the traditional senior secondary curriculum was on providing a solid preparation for university through the study of academic subjects. The forerunners of today's ACACA agencies were university examination boards that examined students' levels of mastery of traditional academic subjects.

A solid preparation in academic subjects continues to be an important objective of senior secondary schooling for students aspiring to tertiary study. However, as the proportion of the age cohort participating in the final years of school has grown, a variety of alternative courses of study and programs of vocational learning have been introduced to meet the needs of students intending to proceed to TAFE, apprenticeships or directly into employment.

With the vast majority of young people participating in the final years of school, this phase of schooling is now being seen not primarily as a preparation for university, or even as preparation for work, but as an important phase in preparing young people for adult life. The senior secondary school is now expected to develop knowledge, skills and attributes that will equip young people to participate fully and effectively in adult society, to be productive contributors to the workforce, and active and engaged citizens.

Tomlinson (2004) refers to the 'basic capabilities needed for success in adult life' and identifies these as including functional mathematics, functional literacy and communication, and functional ICT:

We believe that by age 19 all young people should... be active citizens, equipped to contribute to the economic, social, political and cultural life of the country as well as developing an understanding of the wider international community. (Tomlinson, 2004, p.16)

The Australian Chamber of Commerce and Industry and the Business Council of Australia have identified eight 'employability skills' that they believe all young people should develop through their schooling:

- communication
- teamwork
- problem solving
- initiative and enterprise
- planning and organising
- self management
- learning skills
- technology skills

The Queensland Studies Authority (2005) notes that developing a young person's lifelong learning and employability skills improves their opportunities for employment and in life generally. Research undertaken by the Allen Consulting Group on behalf of the QSA identified ten employability and lifelong skills that education authorities should be seeking to develop:

- 
- |  |                             |
|--|-----------------------------|
| • literacy                               | • problem solving           |
| • numeracy                               | • communication             |
| • information literacy,<br>including ICT | • teamwork                  |
| • capacity to learn<br>independently     | • planning and organising   |
|  | • initiative and enterprise |
|  | • self management           |

Hager et al (2002) observe that general capabilities of this kind not only are important in the workplace and for lifelong learning, but also are highly valued by universities:

The term 'generic skills' is widely used to refer to a range of qualities and capacities that are increasingly viewed as important in higher education. These include thinking skills such as logical and analytical reasoning, problem solving and intellectual curiosity; effective communication skills, teamwork skills, and capacities to identify, access and manage knowledge and information; personal attributes such as imagination, creativity and intellectual rigour; and values such as ethical practice, persistence, integrity and tolerance. This diverse collection of qualities and capacities is distinguished from the discipline-specific knowledge and associated technical skills that traditionally are associated with higher education.(Hager et al., 2002, p.3)

And finally, Reid (2005) argues that the identification of generic capabilities of this kind is an ongoing task for any democracy, is pre-eminently a national matter, and that general capabilities should be seen as equally relevant to all young people:

Although the arenas in which these capabilities are exercised may vary, the capabilities themselves will surely be common. Put another way, although the capabilities will be brought to bear differently in different geographical, cultural and social contexts, they will be the same capabilities.... It makes little sense to construct an education system for a democratic society based on the idea that some capabilities can be developed in some students but not in others. (Reid, 2005, p.46)

The introduction of an Australian Certificate of Education provides an opportunity to review the fundamental purposes of senior secondary schooling and to give greater attention to the role of the final years of school in preparing all young people for life and work beyond school. Central to such a review would be a consideration of general capabilities required in workplaces and necessary for effective functioning in adult society. A focus of the senior years of school should be on the development and recognition of these capabilities in all young people.

## **4.7 Clear reporting**

In the past, when Year 12 examinations were conducted primarily for university entrance, results were reported in ways that allowed candidates to be ranked and fine-grained distinctions to be made for the purposes of student selection. Today's ENTER scores continue to meet this university wish for candidate rankings and fine-grained discrimination. However, as the main focus of senior secondary assessments has shifted from tertiary entrance to the certification of student achievement in this phase of schooling, and as other groups such as trainers and employers have become significant audiences for senior certificates, authorities have worked to provide more informative reports of student achievement.

A desirable feature of an Australian Certificate of Education would be clear, nationally consistent reports that communicate what individual students know, understand and are able to do upon completing secondary schooling. A nationally consistent format for reporting student achievement would make it easier for users of the ACE to compare and interpret results across jurisdictions. The use of a familiar system of reporting, such as A to E grades, would make reports more understandable to users.

## Part II. Evaluation of options

In previous chapters we reviewed some of the challenges confronting Australian senior secondary schools in preparing young people for the changing worlds of study, work and life beyond school and examined the ways in which state and territory education authorities are responding to these challenges. This analysis revealed multiple, and sometimes competing, pressures on senior secondary education. For students intending to enrol in university courses, it remains important that schools provide a solid foundation of disciplinary knowledge and understanding. For students intending to undertake apprenticeships, attend TAFE colleges or go directly into employment, it is important that schools provide a solid foundation of knowledge, skills and competencies for these destinations. For all young people it is important that schools develop general skills, attributes and values that will enable them to function as engaged and effective members of adult society, to adapt in a changing world, and to pursue purposeful learning throughout their lives. Today's senior secondary schools are being challenged to provide learning opportunities appropriate to a wide range of student needs, interests and abilities; to ensure excellence as well as diversity; and to provide multiple pathways that allow students to keep their options open.

Our analyses of current senior secondary arrangements (see Chapter 2 and Appendix 8) highlighted enormous variability across Australia in minimum requirements for the award of senior certificates and in approaches to specifying syllabuses/curriculum frameworks, assessing achievement and reporting student results. Our national consultations revealed a significant level of support for greater national consistency in senior secondary arrangements and, indeed, for the introduction of an Australian Certificate of Education. But there were clear views about the preferred nature of this certificate and how it should be introduced. In Chapter 4 we used the results of our analyses of current challenges, existing senior secondary certification arrangements, and the views of participants in our national consultations to identify a set of desirable features of an Australian Certificate of Education.

In Chapters 5 to 8 we evaluate each of the four options we were asked to consider against the desirable features described in Chapter 4. Our purpose is to establish whether any one of these options appears to be a viable approach to the introduction of an Australian Certificate of Education and, if not, whether our evaluations suggest another way forward.



## 5 An alternative certificate

The first of the four options we were asked to investigate involves the introduction of an Australian Certificate of Education as an ‘alternative’ to existing senior secondary certificates. Under this option, the ACE would sit alongside current certificates and be an alternative that students and schools could choose to undertake, in much the same way that some schools now offer, and some students choose to undertake, the International Baccalaureate Diploma program.

Some questions in relation to this first option are:

- Which students or groups of students would such an ACE benefit?
- What would be the nature of this benefit over existing state/territory certificates?
- What incentives might there be for schools and students to undertake such an ACE?
- How could an alternative ACE of this kind be implemented and what resources would be required (eg, course accreditation processes, assessment, certification, teacher professional development requirements)?
- What requirements would students have to meet to be awarded the ACE?
- How could appropriate standards for the ACE be developed?
- How would the introduction of such a certificate relate to and impact upon current state and territory arrangements?

### 5.1 Considerations

The investigation of this option depends on a mapping of the alternative ways in which the option could be implemented. Key considerations include the nature of the certificate, processes for syllabus and assessment/examination development, and the infrastructure required to manage a national senior school qualification of this kind.

#### **Nature of Certificate**

A first question is: for which group of young people would the certificate be designed? Would it be designed to address the needs of all students participating in the final years of school, or would it be designed for only a subgroup of these students, for example those intending to go on to university? The brief provided to us includes the possibility that an ACE developed under this option might ‘serve a multiplicity of purposes and aspirations, including further training, employment, university entrance, for a wide range of students’.

#### *an inclusive certificate*

A broad and inclusive ACE would have to include traditional academic subjects and their associated examination/assessment procedures, VET courses, and the possibility of student learning occurring in workplaces and other

settings. In other words, an ACE designed to serve a multiplicity of purposes and aspirations would have to address most of the issues currently being addressed through state and territory certificates.

This observation raises the question of what value there would be in introducing another broad and inclusive certificate. What would differentiate such an ACE from existing state and territory certificates, and why would schools and students opt for such a certificate?

One answer to this question is that the ACE would be a *national* certificate. Students undertaking the ACE in different parts of Australia would study nationally developed curricula, would be assessed in the same way across the country and would have their results reported in a nationally consistent way. For families moving between states (eg, Australian Defence Forces families), the availability of a national senior secondary qualification that could be undertaken anywhere in Australia may address the inconvenience of having to deal with nine different state and territory qualifications.

There are other ways in which a national ACE might be different from state and territory certificates. Such a certificate could give more emphasis to the preparation of young people for life and work beyond school, for example by giving more attention to the development and recognition of general capabilities such as reading literacy, mathematical literacy, verbal communication, teamwork, and ICT literacy. All students undertaking the ACE might be required to engage in learning activities aimed at developing employability skills of the kind identified by the Australian Chamber of Commerce and Industry and the Business Council of Australia. An ACE might include some interdisciplinary studies, perhaps along the lines of the Theory of Knowledge component of the IB Diploma. Or, unlike existing Australian certificates, but like the IB Diploma, a national ACE might include a breadth of study requirement.

Significant numbers of schools and students are unlikely to offer and undertake a national ACE in preference to state and territory certificates unless the ACE is considered to provide a higher quality senior secondary education. Features such as a breadth of study requirement and a focus on developing and recognising general capabilities important to life and work beyond school might provide the necessary differentiation. For schools there also would be resource implications of offering the ACE (possibly in addition to the state certificate), meaning that schools would be more likely to offer the ACE if there were adequate financial incentives to do so.

#### *a focused certificate*

Alternatively, an Australian Certificate of Education could be introduced to provide a high quality preparation for university study. Such a certificate would not attempt to replicate the broad range of offerings of current state and territory certificates but would offer a relatively narrow range of academic subjects.

An ACE of this kind would be differentiated from existing senior certificates in that it would be a national certificate available to students throughout Australia. It also could seek to differentiate itself from existing certificates through a focus on the advanced study of disciplines (perhaps by building closer connections with university programs); the benchmarking of curricula against international best practice; the introduction of a breadth of study requirement; a compulsory component focused on developing skills such as logical and analytical reasoning, research and writing; and rigorous external examinations.

### **Development of Syllabuses**

A second consideration concerns the processes that would be used for syllabus development. The most feasible strategy probably would be to convene national panels of experts in each subject to decide on syllabus content. These panels might include both academics and practicing teachers. The task would be to develop a world-class curriculum in each subject, drawing on best practice internationally.

The costs of developing syllabuses for the final years of school vary across subjects. In one Australian state, the cost of developing a Year 11-12 syllabus in Ancient History is estimated at \$270 000. The same state estimates the average annual cost of ‘maintaining’ a syllabus at about \$55 000.

### **Development of Assessments/Examinations**

A third consideration relates to assessment and/or examination processes. The options here are to base assessments only on teacher judgments at the school level, to base assessments only on external subject examinations, or to use a mix of the two. Most education systems currently use a mix of school-based assessment and external examinations. Examinations are considered to provide an objective assessment of student achievement, while school-based assessments draw on a wider range of evidence and include achievements that may not be amenable to external examination.

Table 5.1 shows the annual examination development costs for some selected Year 12 subjects in one Australian state. These costs do not include annual marking costs.

Table 5.1

#### *Annual Costs of Examination Development*

<b>Subject</b>	<b>Cost</b>
Biology	\$90 000
Chemistry	\$80 000
English	\$170 000
History	\$70 000
Mathematics	\$150 000

The costs of marking examinations also vary across subjects. The cost of marking 20 000 papers in, say, Modern History appears to be in the vicinity of \$500 000. In mathematics, the costs may be closer to \$300 000.

**Infrastructure Requirements**

A final consideration concerns the infrastructure that would be required to develop and administer an alternative national certificate. In practice, the development and annual management of an Australian Certificate of Education would require the establishment of a national authority along the lines of the existing state and territory (ACACA) authorities. At a minimum, this authority would establish syllabus committees, publish ACE materials for schools, develop assessments/examinations, liaise with schools and students, organise the marking of examinations and analysis of student results, and print and distribute certificates.

While there would be fixed annual costs of offering such an ACE, the total operating costs would depend on the numbers of students enrolling for the certificate. Examination marking would be a significant proportion of the operating costs as student numbers increased.

Table 5.2 shows how much was spent by each of the state ACACA authorities in 2004. These expenditures do not relate only to senior certificates. As the notes to Table 5.1 indicate, many authorities have responsibility for curriculum development throughout the years of school, some conduct Year 3, 5 and 7 literacy and numeracy testing, and the NSW Board of Studies conducts testing as part of the School Certificate in Year 10. Nevertheless, these figures provide an indication of the costs of providing curriculum and assessment for the final years of school. For example, experience in South Australia suggests that providing certification of learning in Years 11 and 12 for up to 20 000 students costs in excess of \$12 million per year. In Queensland the figure appears slightly lower, presumably because the costs of marking student work are significantly borne by schools rather than the QSA.

**5.2 Evaluating the option**

This first option for the introduction of an Australian Certificate of Education is now evaluated against the features proposed in Chapter 4.

**Inclusivity**

In theory, a national ACE could be designed to meet the needs and interests of the full range of students in the senior secondary school. To do this, the ACE would have to incorporate many of the provisions of existing senior certificates, including alternative courses, vocational learning, and the possibility of students completing much of their learning in workplaces and other community contexts. There would be resource implications of catering for the full range of student needs, and a national infrastructure would have to be built to support such a certificate.

On the other hand, an ACE designed only for tertiary bound students would not satisfy the objective of inclusivity.

Table 5.2  
*Total expenditure in 2004*

	<b>Authority</b>	<b>\$(million)</b>
ACT	Board of Senior Secondary Studies <sup>1</sup>	--
NSW	Board of Studies <sup>2</sup>	93.7
QLD	Queensland Studies Authority <sup>3</sup>	25.3
SA	Senior Secondary Assessment Board of SA <sup>4</sup>	12.1
TAS	Tasmanian Qualifications Authority <sup>5</sup>	2.8
VIC	Victorian Curriculum and Assessment Authority <sup>6</sup>	34.5
WA	Curriculum Council of WA <sup>7</sup>	11.7
		<b>180.1</b>

<sup>1</sup> The ACT Board accredits or registers courses taught by recognised educational institutions, approves the teaching of vocational education courses, establishes principles and procedures for the assessment of students and the moderation of those assessments, and provides certificates and transcripts of students' attainments. In 2004, 2541 students obtained a Year 12 Certificate.

<sup>2</sup> As well as conducting HSC examinations, the NSW Board is responsible for developing curriculum support materials from Kindergarten to Year 12 and for developing and conducting tests for the Year 10 School Certificate. The School Certificate tests and HSC examinations are administered to around 140 000 candidates annually. The Board is responsible for producing standards-based syllabuses and support materials with outcomes and content that set expectations for student learning. It also inspects and registers non-government schools in NSW.

<sup>3</sup> The Queensland Studies Authority is responsible for developing and accrediting preschool guidelines and syllabuses for Years 1 to 12, testing, assessment, moderation, certification, vocational education and training, and tertiary entrance. The QSA conducts the Core Skills Test and literacy and numeracy tests for students in Years 3, 5 and 7. Approximately 31 000 students sit the CST annually and in 2004, the QSA was responsible for the certification of about 40 000 students.

<sup>4</sup> SSABSA conducts the South Australian Certificate of Education (SACE). It provides curriculum, assessment, reporting and certification services to senior secondary students in South Australia, the Northern Territory and South-East Asia who undertake studies for the SACE. The numbers of students receiving a result in one or more Year 12 subjects in 2004 were: SA (16 642), NT (1576) and S-E Asia (1298).

<sup>5</sup> The Tasmanian Qualifications Authority accredits all courses for senior secondary education, vocational education and training, and higher education. It also conducts and moderates assessment for senior secondary courses and issues the Tasmanian Certificate of Education (TCE). The Council issued 5104 certificates and tertiary entrance statements, and 1376 VET certificates in 2004.

<sup>6</sup> The Victorian Curriculum and Assessment Authority is responsible for the development of the Victorian Certificate of Education (VCE), the Curriculum and Standards Framework (CSF) and the Achievement Improvement Monitor (AIM) which tests the literacy and numeracy skills of children in Years 3, 5 and 7. The VCAA is responsible for curriculum and assessment for the VCE and the Victorian Certificate of Applied Learning (VCAL). During the November examination period, around 78 000 students sit more than 100 VCE examinations.

<sup>7</sup> The Curriculum Council of WA sets curriculum policy directions for kindergarten to Year 12. The Council develops and implements a curriculum framework, develops and accredits courses of study for the final years of school, and assesses and certifies student achievement. Approximately 12 500 students currently sit one or more Tertiary Entrance Examinations (TEE) subjects.

### **High Standards for Curriculum and Achievement**

This option provides an opportunity to develop high quality curricula for the senior years of school and to set high standards for student achievement. Because ACE syllabuses would be developed anew, this option provides an opportunity to draw on international best practice in curriculum design and assessment. Syllabuses could be designed by national panels of subject matter experts, curriculum specialists and practicing teachers. Examinations and assessment processes could be designed by national panels that include assessment specialists. Consideration also could be given to incorporating breadth of study requirements and a focus on the development of understandings, capabilities and values for global citizenship and the world of work. A significant advantage of this first option is the opportunity it provides to rethink learning in the senior secondary school.

### **Greater National Consistency**

The introduction of an ACE as an alternative (eleventh) senior secondary certificate would do little, if anything, to achieve greater consistency in senior secondary arrangements. Because the ACE would be available throughout Australia, it would provide a degree of national consistency for those schools and students who chose to offer and undertake the ACE, but such a certificate would sit alongside and add to the variety of arrangements that already exist in the final years of school.

### **Increased Comparability**

For the same reason, an ACE as an alternative senior secondary certificate would do little, if anything, to provide greater comparability of student results across Australia. In fact, the addition of yet another certificate is likely to compound the current problem, requiring users to find ways of comparing results on the ACE with results on state/territory certificates and the IB Diploma.

### **Reduced Duplication**

The current duplication of effort across Australia that results from the maintenance of nine separate state/territory certificates would not be reduced by building an infrastructure to provide an alternative Australian Certificate of Education.

### **Recognition of General Capabilities**

An ACE introduced as an alternative senior secondary certificate could give priority to the development and recognition of general capabilities (knowledge, skills and attributes) important to future participation in adult society and the workforce. Within such an ACE, it would be possible to include interdisciplinary studies and other learning activities to promote skills such as problem-solving, team work, planning and organising, and ICT literacy, and attributes such as initiative and enterprise.

### **General Observations**

The option of introducing an Australian Certificate of Education to sit alongside and compete with the existing nine state and territory certificates and the IB Diploma has both strengths and weaknesses. The strengths relate to the potentially national nature of the certificate and to the opportunities this option provides to introduce innovative and world-class approaches to curricula and assessment. An alternative certificate of this kind would provide national consistency for schools and students undertaking the ACE. This may be very useful for families and students who move interstate and who currently are disadvantaged by differences across jurisdictions.

A new national certificate also would provide an opportunity to rethink curricula for the senior secondary school. Existing senior certificates have been developed over time and have involved the establishment of compromises ('settlements') within local state and territory communities. Significant reforms to existing arrangements often have been difficult to achieve, as was evident in the introduction of the Victorian Certificate of Education and, more recently, the Western Australian Certificate of Education. In senior secondary schooling, conservative forces usually operate to maintain the local status quo. A new national certificate could incorporate from the outset features not present in existing certificates (such as a greater emphasis on the development of general life/work capabilities and/or the inclusion of a breadth of study requirement). The possibility of making significant changes to senior secondary curricula is a particular strength of this option.

The introduction of an Australian Certificate of Education as an alternative to existing qualifications is likely to be most feasible if the ACE is designed as a high quality certificate with a focus on academic preparation.

The weaknesses of this option are that it does little to address concerns about inconsistencies in senior secondary arrangements across Australia, the inability to compare student achievement at the level of school subjects from one jurisdiction to another, and the considerable duplication involved in offering nine separate senior school certificates. In fact, the addition of another certificate almost certainly would compound these problems. A further disadvantage is that this option is likely to be expensive to implement.

Unless an ACE is clearly differentiated from state and territory certificates (for example, unless it is seen to provide a more rigorous academic preparation, a stronger preparation for the world of work, or a higher level of international recognition), it seems unlikely that large numbers of schools and students would opt for an ACE of this kind over existing certificates.

## 6 A certificate modelled on the IB Diploma

The second option also involves the introduction of an Australian Certificate of Education that would sit alongside current certificates and be an alternative that students and schools could choose to undertake. The difference is that, under this second option, the ACE explicitly would be modelled on the International Baccalaureate Diploma program.

Some questions in relation to this second option are:

- What would it mean to model an ACE on the IB Diploma?
- Which students or groups of students would such an ACE benefit?
- What would be the nature of this benefit over existing certificates?
- Could such an ACE serve a multiplicity of purposes and aspirations, including further training, employment and university entrance?
- How could an alternative ACE of this kind be implemented and what resources would be required (eg, course accreditation processes, assessment, certification, teacher professional development requirements)?
- How would the introduction of such a certificate relate to and impact upon current state/territory arrangements?

### 6.1 Key features of the IB Diploma program

Four key features of the IB Diploma Program (DP) are its international standing, its academic rigour, breadth of study, and academic and non-academic core elements. These features are described in more detail in Appendix 2.

#### **International Standing**

An attractive feature of the IB Diploma is its international standing. Because 60 000 students in 1300 schools take the DP annually and because the DP is recognised for admission to 3700 universities around the world, including Harvard, Oxford, Stanford and Yale, the IB Diploma has achieved international recognition as a quality preparation for university study. The international standing of the DP is further enhanced by the involvement of substantial numbers of accredited markers from IB schools internationally, using standardised examination and monitoring procedures developed and overseen by the International Baccalaureate Organisation headquartered in Geneva.

#### **Academic Rigour**

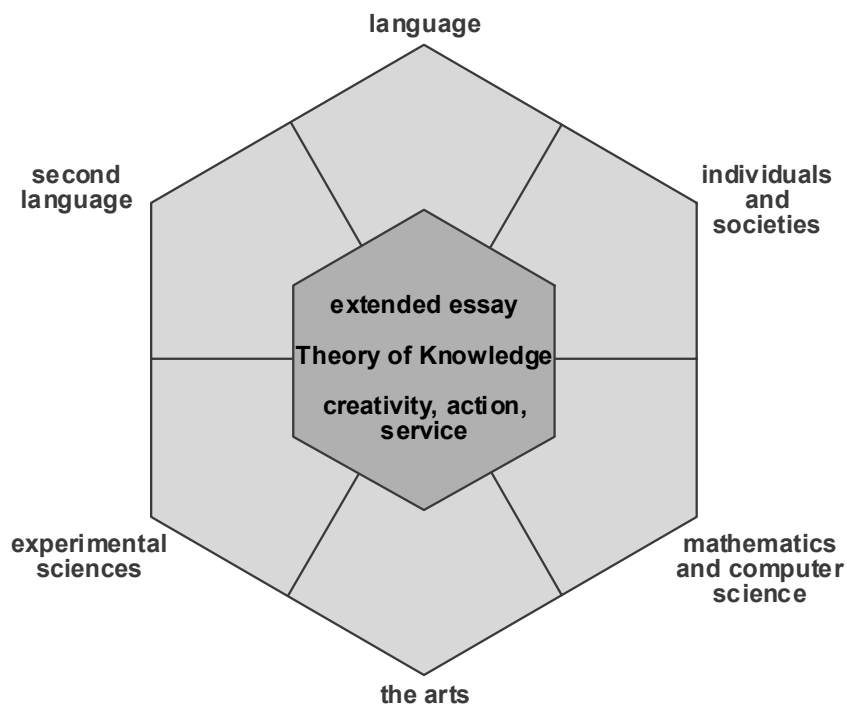
The IB DP also has established a reputation for academic rigour. It has been possible to develop this reputation in part because the Diploma caters expressly and exclusively for students who are bound for university. Students elect to take the program or are recommended by their school, and they may be counselled against doing so by schools if there is doubt that they will achieve satisfactory results. The DP includes a requirement that all students write an



Extended Essay of 4000 words based on original research, and an interdisciplinary requirement (Theory of Knowledge) designed to stimulate critical reflection on knowledge and experience gained inside and outside the classroom. Only schools authorised by the central IBO office are eligible to teach the curriculum and to register candidates for examination.

### **Breadth of Study**

Another distinctive feature of the IB DP is the breadth of the curriculum students are required to study. The IB offers six subject groups (its so-called ‘hexagon model’). Students must take six subjects, including one from each of: first language, second language, individuals and societies, experimental sciences and mathematics.



*Figure 6.1. The IB hexagon model of curriculum*

### **Academic and Non-Academic Core Elements**

The IB Diploma curriculum also has three core elements at the centre of the hexagon model. The extended essay and Theory of Knowledge contribute to the academic rigour of the Diploma. The third core component—creativity, action, service—is non-academic. This component is not assessed, but without authenticated participation, students cannot obtain the Diploma.

## **6.2 Modelling an ACE on the IB**

Could some or all of these key features of the IB Diploma Program be incorporated into an Australian Certificate of Education?

International standing is clearly a desirable feature of an Australian Certificate of Education. Over time, it is possible to imagine an ACE being offered and taken up in countries beyond Australia, just as some state certificates are now

used by schools outside Australia. It also is possible to imagine an ACE being accepted for admissions purposes at universities throughout the world. It is unlikely that an Australian Certificate of Education would ever become an ‘international’ certificate in the sense of the IB Diploma Program, but there is every reason why an ACE should aspire to international recognition as a certificate of quality.

Academic rigour also is a desirable feature of an Australian Certificate of Education, at least for students who intend to go on to tertiary study. Within traditional academic subjects, rigorous and high quality curricula and challenging standards of student achievement should be features of any future national certificate. The incorporation of core requirements such as the IB Extended Essay and the IB Theory of Knowledge have the potential to enhance the academic rigour of an Australian Certificate of Education and would be worthy of exploration under this option.

A key feature of the IB Diploma Program is the breadth of study guaranteed by the requirement that students take subjects from at least five of the IB subject areas. An ACE modelled on the IB DP similarly would ensure breadth of study, at least for university-bound students.

At present, senior secondary certificates have very limited study requirements, which differ from state to state. In Victoria and NSW, two units of some form of English are required; SA, NT and WA require students to demonstrate English competence, but study of English is not compulsory; in other jurisdictions, English is not a compulsory subject at Year 12. In the ACT, Queensland, Tasmania and WA, there are no requirements to study particular subjects for current Year 12 certificates. In most jurisdictions students are required to study only four subjects at Year 12, although requirements are often described in terms of units within subject groupings and levels. In Queensland and Tasmania successful study of a single subject can be sufficient for the award of a Certificate of Education.

The introduction of a breadth of study requirement in an Australian Certificate of Education would have significant resource implications. For example, there would be difficulties in implementing the IB’s second language requirement, even for university pathway students. In Victoria in 2003, only 13% of VCE students studied a LOTE, with 61% of government secondary colleges offering LOTE programs at Year 12.

An ACE modelled on the IB Diploma also might incorporate the IB’s non-academic core component Community, Action, Service (CAS). CAS provides a balance to the academic aspects of schooling, and it may be possible for a similar component to form part of an ACE. Such a requirement would see students engaging in artistic pursuits, sports and community service activities during the final two years of school. The Victorian Essential Learning Standards (VELS) in the lower years already incorporate some aspects of the

IB Middle Years Programme (MYP)<sup>6</sup>, so it may be possible to incorporate and extend these in an Australian Certificate of Education.

The IB approach of not assessing this non-academic component, but requiring authenticated completion, may be a useful model in an ACE. A consideration here would be ensuring students and teachers could manage such a component, including authentication, without the imposition of unreasonable demands. With the current interest in and emphasis on values education in Australian schools, a requirement that students engage in some community-based activity in the final phase of their schooling might be regarded as a desirable component of an ACE, with a possible trickle-down effect to the compulsory years.

### **6.3 Evaluating the option**

Under this option, an Australian Certificate of Education would be developed as a new senior secondary qualification that would sit alongside and be an alternative to existing state and territory senior certificates. Schools would choose to offer, and students would choose to undertake, such an ACE in much the same way as schools and students currently choose to offer and undertake the IB Diploma Program itself. This option is now evaluated against the ACE criteria developed in Chapter 4.

#### **Inclusivity**

Although the IB Diploma requires students to study a broad range of subjects through its hexagon model, the choices available are insufficient to cater for the entire student population in the final years of secondary school. The IB Diploma is composed mainly of academically challenging subjects designed for university-bound students, with relatively little provision for students with interests in vocational study and preparation. Because the IB Diploma lacks the choice and flexibility necessary to meet the needs, abilities and interests of all students now participating in the final years of school, it is unable to provide multiple pathways to higher education and post-school destinations.

It follows that an ACE modelled on the IB would address the needs of only a sub-group of the senior secondary population. It would thus be an alternative to state-based certificates only for those students planning to continue to tertiary study. State and territory certificates would continue to address the needs of the full range of senior secondary students.

#### **High Standards for Curriculum and Achievement**

The IB Diploma has established a reputation for high standards and academic rigour. This reputation has been achieved through its breadth of study requirement, the research-based Extended Essay, and its unique interdisciplinary Theory of Knowledge component. The international development of curricula, accreditation of schools, and the development and

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<sup>6</sup> There are obvious parallels, for example, between the ‘area of interaction’ of the MYP ‘health and social education’ and the VELS strand Physical, Personal and Social Learning; and between the MYP’s ‘homo faber’ and the domain Design, Creativity and Technology.

marking of examinations and moderation of school assessments also contribute to the IB's reputation.

An ACE modelled on the IB might include many of these same features. An ACE that included a breadth of study requirement, a focus on cross-disciplinary academic skills and learning, and the national development of curricula, examinations and moderation processes would be capable of setting high standards and achieving a national and international reputation for academic rigour.

### **Greater National Consistency**

It is difficult to see how the introduction of an ACE modelled on the IB Diploma could promote greater consistency in current senior secondary arrangements across Australia. States and territories presumably would continue with their existing variety of certificate requirements, syllabuses and examination/assessment procedures. There are currently nine senior secondary certificates plus the IB Diploma. An ACE modelled on the IB would become an eleventh certificate. Such a certificate is likely to have administrative and resource implications for schools, meaning that many schools would not be able to offer students choice between the state certificate, the IB Diploma and the ACE.

### **Increased Comparability**

Similarly, it is difficult to see how the introduction of an ACE modelled on the IB Diploma would contribute to achieving greater comparability of student results across Australia. In fact, the addition of yet another certificate is likely to compound the current problem, requiring users to find ways of comparing results on the ACE with results on state/territory certificates and the IB.

### **Reduced Duplication**

The current duplication of effort across Australia resulting from the maintenance of nine separate senior certificates would not be reduced by building an infrastructure to provide a separate Australian Certificate of Education.

### **Recognition of General Capabilities**

The academic components of the IB core (ie, the 4000-word Extended Essay and Theory of Knowledge: TOK) are designed to promote and recognise general skills in independent research and writing and the ability to reflect critically on knowledge and experience gained inside and outside the classroom. The TOK component challenges students to question the bases of knowledge, to be aware of subjective and ideological biases and to develop the ability to analyse evidence that is expressed in rational argument. Beyond these general capabilities, the IB Diploma aims to develop in students an understanding of the nature and value of their own culture as well as international mindedness, including the recognition of universal human values.

An ACE modelled on the IB might incorporate the recognition of a number of general, cross-curricular capabilities through core components such as an extended essay or an extended project that all students would undertake. The

Tomlinson recommendations in the UK proposed the introduction of an extended project as a way of developing general capabilities:

The extended project would ensure that all learners develop and demonstrate a range of generic skills, including research and analysis, problem solving, team-working, independent study, presentation and functional literacy and communication and critical thinking.

(Tomlinson, 2004)

### **General Observations**

The International Baccalaureate Organisation is not keen to have the IB Diploma adopted as the senior secondary qualification by an entire national education system<sup>7</sup>. Nevertheless, provided that there was no infringement of intellectual property rights, it would be possible to model an Australian Certificate of Education on the IB DP. Such an ACE might incorporate key features of the Diploma, including its breadth of study requirement, a focus on the development of the whole student (including international mindedness and through the Creativity, Action, Service component), and the interdisciplinary Extended Essay and Theory of Knowledge components. These are not features of existing state certificates and so may be seen as advantageous, at least for university-bound students.

A question that would need to be addressed before pursuing this option would be the question asked by many participants in the national consultations: ‘Why develop an Australian Certificate of Education modelled on the IB when we already have the IB?’

An ACE modelled on the IB would be appropriate for those students aspiring to tertiary study. Such a certificate has the potential to provide a rigorous preparation for university study, but the academic nature of the program would have limited, if any, benefits for young people not intending to pursue tertiary study.

The introduction of an ACE modelled on the IB and focused on academic preparation for university study would have obvious implications for current state and territory certificates. Schools and students wishing to go on to tertiary study would be faced with a choice between the ACE, the state/territory certificate, and the IB Diploma Program. If the ACE were to become a preferred qualification for university-bound students across Australia, then existing state certificates are likely to take on a lower status as qualifications for other students participating in the senior years of school. Such an outcome may be undesirable.

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<sup>7</sup> Personal communication, Greg Valentine, August 2005.

## 6.4 Incorporating features of the IB into an ACE

An alternative to introducing an Australian Certificate of Education modelled on the IB would be to investigate features of the IB Diploma Program that might be incorporated into, and add value to, an ACE.

One possibility would be for existing IB Diploma subjects to count directly towards an ACE. This possibility will exist as part of the Queensland Certificate of Education from 2007. Students in that state will be able to enrol in IB subjects and results in those subjects will be credited towards the QCE. Schools and teachers will require accreditation by the IBO to deliver these subjects, and assessment, examination and moderation processes will remain subject to the IBO's regulations.

Another possibility would be to incorporate into a future ACE some of the features, objectives and processes of the IB Diploma Program. Table 6.1 lists some characteristics of the IB DP and their possible implications for an Australian Certificate of Education.

Table 6.1

*Some Characteristics of the IB Diploma Program and Possible Implications for an ACE*

IB Diploma Program	Possible Implications for an ACE
<i>Features</i>	
<ul style="list-style-type: none"> <li>The IB has achieved an international standing. Developed originally for use in international schools, it is designed to facilitate geographic mobility.</li> </ul>	<p>An ACE should aspire to at least national standing and should facilitate geographic mobility across Australia.</p> <p>An ACE also should aspire to international recognition as a high quality senior school certificate.</p>
<ul style="list-style-type: none"> <li>The IB provides a rigorous academic curriculum for university-bound students.</li> </ul>	<p>An ACE should provide a rigorous academic curriculum for university-bound students, even if the ACE has much broader objectives.</p>
<ul style="list-style-type: none"> <li>The IB has an underpinning philosophy that runs through its Primary, Middle Years and Diploma Programs.</li> </ul>	<p>An ACE could establish a national approach to curriculum and assessment that could be extended downwards through the years of school (as has occurred with the IB).</p>
<i>Objectives</i>	
<ul style="list-style-type: none"> <li>to provide students with a balanced education</li> </ul>	<p>A breadth of study requirement could be introduced into an ACE, either for all students or for students on university pathways.</p>
<ul style="list-style-type: none"> <li>to promote international understanding, global awareness and the development of 'world citizens'</li> </ul>	<p>An ACE could be designed to promote more directly Australian students' understandings of global issues and international mindedness.</p>

Table 6.1  
(continued)

IB Diploma Program	Possible Implications for an ACE
<ul style="list-style-type: none"> <li>to foster a more compassionate and active citizenry (eg, through community, service activities)</li> <li>to develop and recognise high level skills in research and writing (through the extended essay)</li> </ul>	<p>An ACE could include a requirement that students undertake some local community/service activities during their final years of school.</p> <p>An ACE could include an assessment of students' writing skills independently of their school subjects.</p>
<i>Processes</i>	
<ul style="list-style-type: none"> <li>The IB Diploma uses an international network of examiners/assessors.</li> </ul>	<p>An ACE could develop a national network of examiners and assessors as a way of reducing duplication and ensuring national consistency of achievement standards.</p>
<ul style="list-style-type: none"> <li>The IB reports student achievement against a set of seven (criterion-based) achievement levels in each subject.</li> </ul>	<p>An ACE could report student achievement against a set of described achievement levels (standards) in each subject (sometimes in conjunction with subject marks).</p>
<ul style="list-style-type: none"> <li>The IB attempts to provide international comparability of student results through common examination papers, moderation and sampling.</li> </ul>	<p>An ACE similarly could enhance national comparability through more sharing of assessment materials, the national moderation of student work, and occasional sampling and checking.</p>
<ul style="list-style-type: none"> <li>The IB provides professional development for teachers and school principals in the form of training programs and regional conferences.</li> </ul>	<p>An ACE could be accompanied by a national professional development program. Regular conferences relating to the ACE would provide a further professional development opportunity for teachers and principals.</p>
<ul style="list-style-type: none"> <li>The IBO maintains a research capacity (in Bath) to conduct research into and to underpin its IB programs.</li> </ul>	<p>An ACE also could be underpinned by research, perhaps undertaken in centres around the country.</p>

## 7 A certificate that evolves from existing certificates

The third of the provided options envisages an Australian Certificate of Education being developed from existing state and territory senior secondary certificates. In other words, in time, there would be a single senior school certificate and all eligible students would receive the ‘Australian Certificate of Education’ rather than the current state and territory certificates.

Some questions in relation to this third option are:

- What commonalities and trends in existing senior secondary certificates (eg, certificate requirements, curricula, standards) could be built upon to achieve a single certificate?
- What processes would be required to achieve nationally consistent requirements and standards?
- What potential economies could be achieved through a single ACE rather than the current state/territory processes and certificates?
- How could a single certificate be achieved and what resources would be required to do this?

Under this option, the Australian Certificate of Education would be a common senior secondary qualification awarded by the following state and territory authorities:

- ACT Board of Senior Secondary Studies
- NSW Board of Studies
- Queensland Studies Authority
- Senior Secondary Assessment Board of SA
- Tasmanian Qualifications Authority
- Victorian Curriculum and Assessment Authority
- Curriculum Council of WA

A central question in relation to this option is: what would an Australian Certificate of Education have in common across the various awarding bodies? In other words, what would be the defining features of the Australian Certificate of Education? Once these defining features were established, the issue would become one of identifying what it would take to incorporate these features into each state and territory certificate to enable the relevant authority to award the ACE.

### 7.1 Consistent requirements for certificate

One desirable feature of an Australian Certificate of Education would be the setting of clear, common requirements for the award of the certificate. At present, the minimum requirements for the award of state and territory certificates differ from one jurisdiction to another. These minimum requirements are summarised in Table 7.1. As can be seen from this table, some states currently have school attendance and completion requirements; all have requirements relating to course study; and some states require specified



levels of achievement. If an ACE were to be developed from the existing certificates, it would be desirable to identify and implement common requirements for the award of the certificate. To do this it would be necessary to establish agreement on any general requirements, the required amount of study (eg, number of hours), and on any levels of achievement that students would be required to demonstrate.

## 7.2 More consistent curricula

A second desirable feature of a national certificate would be greater consistency in what is taught in a subject across Australia.

Table 7.2 shows some selected senior secondary subjects and the jurisdictions in which they are offered. Many subjects offered are not shown here, including languages other than English. As can be seen from this table, a number of subjects are offered in all or almost all states and territories. In some cases, the subject name differs slightly from state to state. In other cases (eg, English), the use of the same name obscures differences in how the subject is approached and taught across jurisdictions. A 2003 ACACA study concluded that among 48 subject areas, 23 were offered in all jurisdictions, and a further 12 were offered in all but one. Of 14 VET subjects identified, most were offered by all jurisdictions.

The 1995 project *Mapping the Curriculum in the Final Year of Senior Schooling across Australia* studied the documented curriculum of eighteen subjects and found that in no case was the description of a subject in one state entirely or strikingly different from what was described in other states. The study concluded that there was ‘broad consensus on what is appropriate and logical for students to study in the final year of schooling’ – not only in the traditional areas of learning, but also in more innovative areas.

This conclusion suggests that it should be possible to identify a core of curriculum content in a subject that it is ‘appropriate and logical’ for students to study regardless of where they live in Australia. This common core is likely to consist of big ideas, key principles and fundamental knowledge in the subject. In an Australian Certificate of Education, this core probably should not be identified simply as content that is currently common to all certificates. That approach would define the core curriculum in an ACE subject as the ‘lowest common denominator’ of what currently exists. Rather, the core content in a subject should be identified by subject matter specialists—including teachers of the subject—as the essential learning to which all students choosing the subject should have access.

Table 7.1

*Requirements for the Award of Senior Certificates*

	<b>General Requirements</b>	<b>Course Requirements</b>	<b>Required Achievement Levels</b>
ACT		Complete a coherent pattern of study: at least 17 standard units forming at least two minors (maximum contribution per course is 8 standard units).	
NSW	Gain the School Certificate or other recognised qualification. Attend a government or accredited non-government school, TAFE NSW, or Board-recognised school outside NSW.	Satisfactorily complete courses that comprise the required pattern of study. Sit for and make a serious attempt at the required HSC examination(s).	
QLD	Complete 12 years in full-time schooling. Remain at school until a prescribed date.	Obtain a result in at least one semester in at least one area of study (any category).	
SA		Gain 'recorded achievement' in at least 22 units of study. Satisfactorily complete the 4 components of the Writing Based Literacy Assessment.	Gain 'satisfactory achievement' in at least 16 of the 22 units, including three 2-unit sequences at Stage 2.
TAS	Attend government or accredited non-government senior secondary school in Tasmania.	Complete at least one TCE senior secondary study or nationally recognised VET competence or certificate.	
VIC		Satisfactorily complete at least 16 units (must include at least 3 units of English plus three sequences of Unit 3-4 studies; can include VET)	
WA		Meet assessment requirements in at least 20 units (incl. at least three 2-unit combinations; 4 units of English; all 13 overarching outcomes). Meet English Language Competence requirement. Complete approx 20 hrs voluntary service.	Gain an average Level 4 from at least five courses.

Table 7.2  
*Some Selected Senior Secondary Subjects*

	NSW	TAS	QLD	VIC	SA	WA	ACT
Accounting	Accounting	Accounting	Accounting	Accounting	Accounting Studies	Accounting and Finance	Accounting
Biology	Biology	Biology	Biological Science	Biology	Biology	Biological Sciences; Human Biol. Sciences	Biology
Business	Business Studies		Business Organisation and Management Chemistry	Business Management	Business Studies	Business Management and Enterprise Chemistry	Business Studies
Chemistry	Chemistry	Chemistry		Chemistry	Chemistry		Chemistry
Dance	Dance	Dance	Dance	Dance	Dance Studies	Dance	Performing Arts
Drama	Drama	Drama	Drama	Drama	Drama Studies	Drama	Performing Arts
Economics	Economics	Economics	Economics	Economics	Economics	Economics	Economics
English	English	English	English	English	English Studies	English	English
Geography	Geography	Geography	Geography	Geography	Geography Studies	Geography	Geography
History	Ancient; Modern; Extension	Ancient Civilisations; Twentieth Century; Australian Information Systems	Ancient;	History	Classical Studies; Modern; Australian	History: Ancient and Modern	History
Information	Information Processing and Technology		Information Processing & Technology; Information Technology Systems	Information Processing & Management; Information Technology; Information Systems and Technology	Information Technology Studies	Applied Information Technology	Information Studies
Legal, Political	Legal Studies	Legal Studies	Legal Studies; Political Studies	Legal Studies; Political Studies	Legal Studies; Australian and International Politics Studies; Methods.	Politics and Law	Legal Studies and Political Studies
Mathematics	General; Prelim. Ext.; HSC Ext. 1; HSC Ext. 2.	Applied; Specialised; Methods.	Maths A; Maths B; Maths C.	Further; Methods; Specialist.		Mathematics	Mathematics
Music	Music1; Music 2	Music; Music (Solo Performance); Performance Sport Science; Health Studies	Music; Music Extension (Performance)	Music Styles; Music Performance		Music	Music
Physical, Health, Sport, Personal	Personal Development, Health and Physical Education		Physical Education; Health Education	Physical Education; Health and Human Development	Physical Education	Physical Education Studies; Health Studies	Physical Education
Physics	Physics	Physics	Physics	Physics	Physics	Physics	Physics
Psychology		Psychology		Psychology	Psychology	Psychology	Theory of Knowledge Religious Studies
Religion	Studies of Religion	Studies in Religion	Study of Religion	Religion and Society	Studies of Religion	Religion and Life	

### **7.3 More consistency in reporting**

A third desirable feature of an ACE would be the development of more consistent ways of reporting student achievement across jurisdictions. The various ways in which jurisdictions currently report student achievement are shown in Table 7.3. In most jurisdictions, students' results are reported on statements of results / records of achievement. In the ACT, Queensland and Tasmania, results are reported directly on the certificate itself. If existing senior certificates were to become the Australian Certificate of Education, a more consistent approach to reporting student achievement would be desirable.

### **7.4 More consistent terminology**

Under this option, another desirable feature of an ACE would be greater consistency in terminology across awarding bodies. Currently, states and territories use a variety of different terms to describe senior secondary courses, assessment procedures and student achievement. These differences are evident in the detailed descriptions of current arrangements in Appendix 8. In some cases, different terms are used to indicate different intentions in different states; in others, different terminology does not indicate material differences. If an ACE were to be developed from existing certificates it would be desirable for greater consistency to be established and used across awarding bodies.

### **7.5 Evaluating the option**

Under this option, each existing state and territory certificate would be eligible to be known as the Australian Certificate of Education once a set of national requirements had been met. These requirements might relate to minimum conditions for the award of the certificate, the inclusion of core curriculum content in nominated subjects, the adoption of a common system for reporting student results, and the use of more consistent terminology.

This option is now evaluated against the criteria developed in Chapter 4.

#### **Inclusivity**

All states and territories currently attempt to provide learning opportunities to meet the needs of all students in the senior secondary school. In systems other than Victoria, senior certificates provide for a wide range of academic/general and vocational learning in schools, workplaces and community settings. In Victoria, the Victorian Certificate of Education and the Victorian Certificate of Applied Learning together attempt to address the needs of all young people in these years of school.

There is no reason why existing certificates, having incorporated the requirements to become the ACE, should not continue to be inclusive. An Australian Certificate of Education that emerges from current practices in the eight states and territories should be expected to continue to serve the interests and needs of all students in the final years of school.

Table 7.3  
*Formats Used to Report Student Achievement*

State/T	Reporting Format
<b>ACT</b>	Subject result (unit within a course) reported as a letter-grade (A to E) based on generic criteria across all course frameworks and understood in terms of specific unit grade descriptors.
<b>NSW</b>	<p>Subject result is mark out of 100</p> <p>-- calculated as average of examination mark and school assessment</p> <p>-- subject mark locates student result in an achievement Band:</p> <p>Band 6 (highest)</p> <p>Band 5</p> <p>Band 4</p> <p>Band 3</p> <p>Band 2</p> <p>Band 1 (lowest)</p>
<b>QLD</b>	<p>Subject results reported as achievement levels based on criteria and standards set out in syllabuses:</p> <p>Very High Achievement (VHA)</p> <p>High Achievement (HA)</p> <p>Sound Achievement (SA)</p> <p>Limited Achievement (LA)</p> <p>Very Limited Achievement (VLA)</p> <p>QCS results reported as a grade A–E</p>
<b>SA</b>	<p>For Stage 2 (usually Yr 12) subjects:</p> <p>Subject Achievement Scores (20-point scale) reported as grades:</p> <p>A (20–17)</p> <p>B (16–14)</p> <p>C (13–11)</p> <p>D (10–8)</p> <p>E (7–0)</p> <p>For Stage 1 (usually Yr 11) subjects:</p> <p>SA satisfactory achievement</p> <p>RA recorded achievement</p> <p>RNM requirements not met</p>
<b>TAS</b>	<p>Subject result is reported as one of the following awards, for which there are detailed descriptions in syllabuses:</p> <p>Exceptional Achievement (EA)</p> <p>High Achievement (HA)</p> <p>Commendable Achievement (CA)</p> <p>Satisfactory Achievement (SA)</p> <p>Preliminary Achievement (PA)</p>
<b>VIC</b>	Graded assessments (A <sup>+</sup> , A, B <sup>+</sup> , B, C <sup>+</sup> , C, D <sup>+</sup> , D, E <sup>+</sup> , E) and Study Score (max. 50)
<b>WA</b>	Results from each of school assessment and external examination reported as Course Achievement level/rating (eg, 6.20).

### **High Standards for Curriculum and Achievement**

Nationally consistent high standards for curriculum and assessment could be achieved under this option by ensuring that the same challenging subject matter is addressed in all states and territories and that high expectations are set for student achievement. Challenging subject matter and high expectations could be established subject by subject, in at least a number of nominated subjects. The setting of high standards would not require the introduction of a 'national curriculum', but could be achieved by identifying a core of essential curriculum content in a subject and by reporting student achievement against nationally adopted high performance standards.

### **Greater National Consistency**

The distinguishing feature of this option is the attempt to achieve greater national consistency across existing state and territory certificates. Under this option, an attempt could be made to achieve greater consistency in minimum requirements for the award of the certificate, in core curriculum content, in ways of reporting student results, and in terminology.

### **Increased Comparability**

This option also provides an opportunity to achieve greater comparability of students' subject achievements. Greater comparability could be achieved through the adoption of common performance standards across jurisdictions and/or through the sharing of assessment materials and processes across states and territories.

### **Reduced Duplication**

This option introduces the possibility of reducing unnecessary duplication across jurisdictions. Under the umbrella of an Australian Certificate of Education, there could be more sharing of effort to develop syllabuses / curriculum frameworks and assessment / examination materials.

### **Recognition of General Capabilities**

Senior certificates usually do not include a direct assessment of general capabilities of the kind discussed in Chapter 4. The Queensland Core Skills Test assesses a number of general 'skills' identified through an analysis of senior curricula. The ACT Scaling Test and the Victorian General Achievement Test assess general skills such as verbal and quantitative reasoning. But these three tests have been introduced for moderation purposes. Students' test responses are aggregated to a total test score and these scores are used in various ways to ensure comparability of results (see Appendix 5). No attempt is made to report a student's performance in a particular skill area such as quantitative reasoning or reading literacy.

It follows that the recognition of general capabilities would require the development and introduction of a nationally consistent approach to assessing these capabilities.

### **General Observations**

An Australian Certificate of Education that results from the incorporation of national requirements for greater consistency and comparability into existing senior certificates could meet most of the criteria in Chapter 4. Under this option, each of the state and territory authorities would maintain its current responsibilities, including the development of syllabuses or curriculum frameworks and the development and administration of examinations and/or assessment processes. The new elements would be the incorporation of common minimum requirements for the award of the certificate, a core of essential curriculum content in at least some nominated subjects, the reporting of student results in a nationally consistent way, and the adoption of some nationally consistent terminology. If a state/territory certificate satisfied these requirements, then it could be eligible to become the Australian Certificate of Education.

The advantages of this option include the fact that it recognises and builds on to the strengths of existing senior secondary arrangements. An ACE that emerges from existing certificates inevitably would be inclusive rather than exclusive. While there would be differences in arrangements across the eight awarding bodies for the certificate, this option could provide greater consistency in certificate requirements and in the reporting of student achievement, and a national core of essential curriculum content in at least some subject areas.

The disadvantages of this option include the fact that it depends on gaining the agreement of states and territories to incorporate nationally consistent arrangements into existing certificates.

## 8 A certificate based on a scholastic aptitude test

The fourth provided option involves the introduction of an Australian Certificate of Education based on a national scholastic aptitude test. Under this option, some or all students in their final year of secondary school would sit the same test. This test would assess students' potential for study at higher education institutions, and the ACE would record each eligible student's aptitude test results.

Some questions in relation to this fourth option are:

- What would be the purposes and benefits of introducing a national scholastic aptitude test?
- What skills and/or abilities might a scholastic aptitude test assess?
- How would an ACE based on a scholastic ability test relate to existing Australian aptitude/skills competency tests, such as the General Ability Test (Victoria), the Queensland Core Skills Test and the ACT Scaling Test?
- How would an ACE based on a scholastic ability test relate to existing senior certificates?
- How would such a certificate be implemented and what resources would be required?

### 8.1 The scholastic aptitude test model

The scholastic aptitude test model derives from the US Scholastic Aptitude Test (SAT), renamed the Scholastic Assessment Test in 1996. Key features of the model are the way in which test results are used, and the content of the test.

In the US, students can choose to sit the SAT at the completion of secondary school and their results on the test contribute to university admissions decisions<sup>8</sup>. The SAT acts as a benchmark in the absence of a nationally defined curriculum and standardised end of school assessments. It is claimed that the SAT measures students' aptitude for college education independently of social factors such as gender, ethnic background and social class.

Pressures to better align the SAT with current curricula and institutional practices in high schools and colleges have led to recent changes. The SAT now comprises three sections: mathematical reasoning, critical reasoning and writing.

The mathematical reasoning component addresses: number and operations; algebra and functions; geometry; statistics, probability, and data analysis in the context of topics such as exponential growth, absolute value, and functional notation.

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<sup>8</sup> The SAT is not the only selection instrument for higher education in the US. An alternative to the SAT, the American College Testing program (ACT), has been offered since 1959.



The critical reasoning (formerly ‘verbal reasoning’) component addresses both critical and sentence-level reading, grammar, usage, and word choice. The writing component (a 2005 addition) assesses students’ abilities to identify sentence errors, improve sentences, and improve paragraphs; and skill in developing a point of view on an issue.

The features of the SAT are described in greater detail in Appendix 3. Similar tests are used for university selection purposes in Israel (the Psychometric Entrance Test) and in Sweden (the SweSAT). The features and uses of these tests also are described in Appendix 3.

## **8.2 Modelling an ACE on the SAT**

If an Australian Certificate of Education were to be based on a scholastic aptitude test of the SAT kind, a primary consideration would be the use of the test score.

### **University Use of Aptitude Test Scores**

Many colleges in the US use SAT scores in conjunction with high school record (including the high school class rank and grade point average) as part of their selection processes. However, there is considerable variation in practices, with some colleges not using admissions test scores for some or even any of their students (See Appendix 3 for detail). By contrast with the US, in Israel students apply to a department within a higher education institution and the department makes the decision on the basis of a composite of the Psychometric Entrance Test (PET) score and matriculation examination grade. In Sweden, there is no attempt to combine the SweSAT with school grades. Students qualify for study in higher education courses by either a strong high school record or high scores on the SweSAT, whichever is the more favourable to the student.

If Australian universities were to use aptitude test scores for selection purposes, the capacity for tests of this kind to predict tertiary study grades would be of particular interest. In the US, high school record and admissions test scores are able to predict college grades to a modest degree. Of the two, high school record is generally the better predictor. However, a composite score comprising equal weightings of the two predictors is a better predictor than either of the two predictors separately.

There is consistent evidence that the SAT under-predicts female attainment, even after differential selection of courses is allowed for. The findings for ethnic groups are less consistent, with some researchers arguing that test scores are a fair representation of attainment and others providing contrary evidence. The Israeli Psychometric Entrance Test (PET) assesses two factors which correlate with SAT mathematical and verbal reasoning, but the PET scores generally predict first-year performance better than high school grades. In general, it would appear that aptitude test scores predict approximately 25 to 35 percent of the variation in first year scores.

### **Student Use of Aptitude Test Scores**

If Australian universities were to use aptitude test scores for selection purposes, consideration also might be given to the use that students could make of their test scores. Students in the US receive their scores before they make their final applications to tertiary institutions, so it is possible for them to use their results to guide their application decisions, particularly if they are looking to study in more selective institutions. In reality, however, aptitude test scores appear not to greatly influence students' decisions. Seventy two per cent of SAT students say that their test results have no effect on their choice of colleges. When test scores do influence choices, there is a tendency for them to steer students towards less selective colleges, particularly among low scorers and students from ethnic minorities (McDonald et al., 2001).

There is evidence that grades from tests such as the SAT also are used by high school and college counsellors to guide students in course selection. Given the predictive validity of such test, interpretation would require caution.

### **An Alternative Conceptualisation –Australian Experience**

Scores on the SAT, PET and SweSAT are used as part of the tertiary entrance selection process. By contrast, scores on Australian Year 12 general ability tests, including the GAT, the AST and the Queensland Core Skills Test (QCST), are used primarily to statistically moderate school-based assessments (see Appendix 5). In Victoria, the GAT is used to derive examination scores in subjects for which a student's examination performance is affected by accident, sickness or misadventure; to review school assessments in school assessed tasks; and to check the accuracy of examination marking. If there is a significant difference between a student's examination score and their predicted score, then the examination performance is reassessed.

If an ACE were to be based on a scholastic aptitude test, it would be possible to use the test scores to statistically moderate school assessments.

## **8.3 Evaluating the option**

Under this option, an Australian Certificate of Education would be based on an aptitude test and would sit alongside existing state and territory senior certificates. Students intending to apply for tertiary studies would sit the scholastic aptitude test in their final year of school. This option is now evaluated against the criteria developed in Chapter 4.

### **Inclusivity**

The addition of a scholastic aptitude test would allow current national curriculum diversity to be maintained. However, there would be a question about how useful an ACE modelled on the SAT, PET and SweSAT model would be for all students now participating in the final years of school.

If an ACE were to be based on an aptitude test designed primarily for tertiary entrance, it would have little if any relevance for students pursuing other pathways in the senior years of school. While such an ACE would provide additional information about the skills of students planning to continue to

university study, state and territory certificates and procedures would have to be maintained to address the needs of the full range of senior secondary students.

It also is important to note that there has been considerable controversy over the fairness of these tests for university selection, particularly in relation to gender and ethnic score differences. For example, evidence suggests that both the verbal and mathematical sections of the SAT are somewhat biased in favour of males, although it cannot be ruled out that this is due to male SAT takers being a more highly selected group or being better prepared. Evidence for students from ethnic minorities is somewhat less conclusive. Although groups such as African Americans score about one standard deviation lower on the SAT than Whites, this pattern is repeated on virtually all tests of this kind (McDonald et al., 2001).

Although controlled studies show the effects of coaching to be small, coaching may have an impact when students apply to more selective institutions. Furthermore, despite the modest effects of coaching, the costs involved suggest that this may be a potential source of bias, as students from more affluent backgrounds may have greater access to preparation materials and courses.

### **High Standards for Curriculum and Achievement**

The introduction of a scholastic aptitude test as part of university entrance requirements could have a negative impact on the goal of setting and maintaining high standards for curriculum and achievement. In the US, where students' test results are very important in college admissions, there is evidence that test preparation can distract students from their normal high school studies. High school tutors often are responsible for preparing students to take the test and a considerable industry has developed around preparation and coaching. The NSW Chairs of Academic Boards expressed concern about the possibility of a similar outcome in Australia and emphasised that universities would not wish to see a reduction in levels of student preparation in academic subjects.

### **Greater National Consistency**

If the ACE were to be based on a scholastic aptitude test, states and territories presumably would continue with their existing variety of certificate requirements, syllabuses and examination/assessment procedures. There is no obvious way in which the introduction of an aptitude test would address concerns about a lack of consistency in senior secondary arrangements.

### **Increased Comparability**

It is possible that a national scholastic aptitude test could contribute towards greater comparability. For the purposes of university entrance, students' results are aggregated to provide a tertiary entrance rank (TER). These tertiary entrance ranks are based first on statistical processes within each state to adjust students' subject results for the general abilities of the candidates choosing individual subjects, and then on a statistical process designed to make them comparable across states. Both processes involve assumptions that have been questioned. For example, the interstate process involves an assumption that the distribution of overall student achievement is the same in each state and

territory. The introduction of a scholastic aptitude test could improve the process currently used to establish equivalences of tertiary entrance ranks across Australia.

### **Reduced Duplication**

The current duplication of effort across Australia that results from the maintenance of nine separate senior certificates would not be reduced by providing a separate Australian Certificate of Education based on a scholastic aptitude test. However, a national scholastic aptitude test might replace existing state-based tests (GAT, QCST and ACT scaling test).

### **Recognition of General Capabilities**

Scholastic aptitude tests are designed to assess a small number of general capabilities considered important for university study. These capabilities usually include verbal reasoning, mathematical reasoning and written English and are conceptualised as generic or cross-curricular. The introduction of an aptitude test would address a small number of general capabilities, but not the range of capabilities discussed in Chapter 4.

### **General Observations**

The American SAT operates in a context in which states tend not to have well developed and widely adopted state syllabuses and examinations/assessments for the senior years of school. American commentators<sup>9</sup> sometimes point to countries such as Australia and England as models that the US could follow in its efforts to raise educational standards. In the absence of syllabuses and statewide assessment/examination processes, American higher education institutions rely heavily on tests such as the SAT as a common measure across schools, school districts and states. Although Australian universities use specific purpose tests (eg, to assess English language competence; to select mature age applicants; to select for entry into professional courses such as medicine, business and law), there is little perceived need for a general aptitude test for university entrance. And, as noted above, there is some concern on the part of universities about moves in the direction of reliance on an SAT-type test.

The positive elements of this option may include the possibility of assessing a few important capabilities (eg, verbal reasoning, quantitative reasoning, written English) in a nationally consistent way. Additional information of this kind may be useful to users of current senior certificates—including universities—in complementing students' subject results. A national test of this kind also may be useful in attempts to achieve greater comparability of results across jurisdictions, either at the subject level or at the level of ENTER scores, or both.

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<sup>9</sup> eg, Lauren Resnick

## Part III. Recommendations

Having evaluated each of the four provided options, we now develop recommendations for the introduction of an Australian Certificate of Education. The general approach we are recommending is most similar to Option 3—the introduction of a certificate that evolves from existing senior certificates—but our recommendations draw on elements of all four options and also extend beyond the provided options.

Underpinning the recommendations that we elaborate in Chapters 9 to 14 is a vision for a future Australian Certificate of Education that would be available to all senior secondary school students, regardless of where they live in Australia. We envisage a future ACE being awarded by each of the existing state authorities in place of current state and territory certificates. Although there would continue to be differences in ACE arrangements across states and territories, important features of the Certificate would be the same throughout Australia.

One feature of the Australian Certificate of Education that would be nationally consistent would be its general purpose/objectives. The objectives of the Certificate would include encouraging student participation in the final years of school; meeting the diverse needs, interests and abilities of students in this phase of schooling; encouraging and recognising excellence in both general/academic and vocational learning; and developing general skills and attributes necessary for life and work beyond school.

Other nationally consistent features of the Australian Certificate of Education would be, for some subjects, the identification of a core of essential curriculum content (key concepts, principles, ideas, knowledge) to be taught throughout Australia; the use of a nationally consistent format for reporting students' results; and a direct assessment of some general capabilities important for tertiary education, training and employment.

While our vision is for an Australian Certificate of Education that eventually would replace the existing nine state and territory senior certificates, and we see this as a desirable long-term objective, we recognise the challenges in achieving this vision. The recommendations that we make in the following chapters are designed as practical steps towards the introduction of a single certificate. Our focus is on first achieving nationally consistent high standards, nationally comparable student results, and greater attention to and recognition of capabilities important to life and work beyond school.

To the extent possible, we outline processes for the implementation of each recommendation, including a possible timeline. We have been able to do this only up to a point in relation to each recommendation; finer-grained implementation details generally will have to be developed as part of the implementation process.

## 9 Curriculum essentials

Senior secondary curricula should provide young people with world-class learning opportunities. Whatever pathways students pursue in the senior secondary years, and whatever their post-school aspirations, all students should be given opportunities to develop deep understandings of subject matter, high-level skills, and opportunities to transfer and apply those understandings and skills in a range of contexts. Expectations of student learning in the senior secondary years should at least be equivalent to what is expected of students in other countries.

Opportunities to engage with the fundamental knowledge, principles and ideas that underpin senior secondary curricula also should be equally available to students regardless of where they live in Australia. We believe that every Australian student studying subjects such as Biology and Economics should have guaranteed access to a core of essential content in those subjects.

In stating these beliefs, we are not implying that current senior curricula do not provide world-class learning opportunities or that there are major differences in the quality of curricula across Australia. We have not been able to evaluate individual curricula through this project, and there have been very few past attempts to compare curricula across states and territories, and still fewer attempts to benchmark Australian curricula against international best practice.

However, our national consultations revealed widespread support for the idea that students in different parts of Australia *should* be able to engage with subjects in similar depth and academic rigour. Some saw this simply as a student entitlement. Others, including students themselves, were concerned about the practical implications of possible differences in state curricula:

Every system has a separate method of assessment, requirements, and more worryingly, differing syllabuses. No student wishes to hear that, although they meet the prerequisites for a university course in a different state, they will not have the same knowledge as their classmates.<sup>10</sup>

We believe that curriculum flexibility is important to allow teachers to design curricula appropriate to local circumstances and student needs. Local social settings, industries, geography and natural environments provide rich contexts for teaching and making learning relevant to young people's needs and interests. However, we believe that in most subject areas there are fundamental and transferable skills and understandings that all students should be developing, regardless of context.

We are recommending that essential curriculum elements be identified for a range of senior school subjects. These common features of senior syllabuses/

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<sup>10</sup> Excerpt from unsolicited submission to the investigation from the Student Representative Council at Marryatville High School, South Australia.

curriculum frameworks would include a core of common curriculum content to be taught in a subject throughout Australia. In some vocational subjects, national agreement already has been reached on core skills and knowledge. We are proposing that core curriculum elements also be defined for a number of nominated academic/general subjects.

Our recommendation does not imply the introduction of a single ‘national curriculum’ specifying what all students should study in a subject. We envisage the maintenance of separate state/territory syllabuses and curriculum frameworks. But within these, we are proposing the incorporation of a core of essential curriculum content, at least in some nominated subjects.

## **9.1 Aspects of curriculum**

A task in developing greater national consistency would be to decide, subject by subject, on a core of curriculum content that should be common across all jurisdictions. Another question would be whether the general framework for a subject (eg, subject rationale, broad aims, number of hours of study, etc) should be more nationally consistent.

To explore these questions we have examined state and territory syllabuses/curriculum frameworks in one particular subject: Biology. This analysis is limited; a more detailed curriculum analysis by Biology subject matter experts would provide a more complete exploration. Our purpose is simply to illustrate the kinds of issues that could be addressed in such an exercise.

### **Subject Rationale**

All Biology syllabuses/frameworks currently have a statement of the rationale underpinning the subject. The purpose of the subject rationale is to define the area of study and to map some of the key ideas and issues addressed through the study of the subject. The rationale also sometimes describes broad intentions for student learning (eg, ‘develop a deeper understanding and aesthetic appreciation of the living world’) and the ways in which students will learn (eg, ‘working individually and with others in practical, field and interactive activities’). Figure 9.1 shows excerpts from the subject rationale for Biology in the seven states and territories that have syllabuses/curriculum frameworks. These excerpts show how Biology is defined in each jurisdiction.

The development of national curriculum essentials for Biology probably requires as a first step broad agreement on the definition of the subject, on major ideas and issues to be covered in the subject, and on broad learning intentions—including attitudes and values and the development of skills of inquiry and communication. An analysis of the subject rationale for Biology in each of the states and territories suggests that broad agreement should not be difficult to achieve in this subject.

**ACT (excerpt)**

Biology is the scientific study of living organisms and their environment. It is a multi disciplinary science which is unified by the theories of evolution and which draws on concepts from Physics, Mathematics, Chemistry and the Earth Sciences. Biology has many levels of organisation from the biochemistry of the cell to the dynamics of the biosphere. The study of Biology enhances understanding of the natural world and the place of people and other organisms within it. This includes knowledge and curiosity about human life and health, how humans interact with the natural world and the need to sustain the complex interactions that make possible the diversity of life on Earth.

**NSW (excerpt)**

Biology Stage 6 explores the levels of organisation of life, from the molecular level through cellular to higher levels of organisational structure and function, which exhibit evolution as a common source of unity and diversity. It includes developing an understanding of the interactions within and between organisms and between organisms and their environment... The history and philosophy of science, as it relates to the development of the understanding, utilisation and manipulation of living systems by the human species, is an integral part of the study of contemporary biology and assists students to recognise their responsibilities to conserve, protect, maintain and improve the quality of environments for future generations.

**QLD (excerpt)**

Biology is the study of life in its many manifestations. It encompasses studies of the origin, development, diversity, functioning and evolution of living systems and the consequences of intervention in those systems. Biology is characterised by a view of life as a unique phenomenon with fundamental unity. Living processes and systems have many interacting factors that make quantification and prediction difficult. An understanding of these processes and systems requires integration of many branches of knowledge.

**SA (excerpt)**

Biology involves study of the phenomenon of life at levels ranging from the interactions of molecules to the interactions of organisms in the biosphere. Among important unifying ideas and theories developed by biologists are the cell theory and the theory of evolution... The study of Biology offers opportunities for students to consider the impact of human activities both on the organisms and ecosystems that constitute the biosphere and on individual human beings and human society.

(contd)

Figure 9.1. Subject rationale (Biology)



**TAS (excerpt)**

Biology in the 21<sup>st</sup> century is a rapidly growing science, accumulating a vast amount of information about the living world. In this syllabus students will develop a broad understanding of the important biological concepts and processes. This fundamental background will enable them to critically evaluate information, participate in debates and draw conclusions on contentious biological issues. It will also provide a foundation for further studies in the Life Sciences.

**VIC (excerpt)**

Biology is the study of living things from familiar, complex multicellular organisms that live in the many different habitats of our biosphere to single celled micro-organisms that live in seemingly inhospitable conditions. It is a study of the dynamic relationships between living things and their environment and the challenges of survival. All living things have many structural and functional characteristics in common, which can be used to classify and group organisms. Modern biology draws on biochemistry, neuroscience, genetics, evolutionary biology, behavioural science, and cell and molecular biology. It connects with chemistry, physics, earth and space sciences in exploring the nature of past and present life, and the possibility of life forms beyond our planet.

**WA (excerpt)**

Biology is a body of knowledge about living organisms and their interrelationships with each other and with the physical world. Biology is also a process that allows us to investigate and answer questions about the living world. It is a way of knowing that enables us to make decisions that will influence the wellbeing of all organisms and the biosphere and ultimately ourselves. Biology influences diverse aspects of our understanding of the world from sub-microscopic entities such as genes and DNA to global theories such as evolution and the greenhouse effect.

Figure 9.1 (continued)

**Domains of Learning**

All Biology syllabuses/frameworks currently identify a small number of major areas of Biology learning. These areas are given different names in different jurisdictions: ACT ('Goals'); NSW ('Domains'); QLD ('Objectives'); SA ('Strands'); TAS ('Criteria'); VIC ('Outcomes'); WA ('Outcomes'). An analysis of existing Biology documents suggest that these broad areas of learning might usefully be clustered as follows:

- Knowledge and Understanding of Biology
- Investigative Skills in Biology
- Understanding of Social and Environmental Issues
- Attitudes and Values
- Communication Skills

Table 9.1 maps the syllabuses/curriculum frameworks of each state and territory against these five broad domains of learning. Although no state uses

all five domains as the structure for its syllabus, these aspects of Biology learning can be found in most state and territory documents (eg, communication as one of the identified ‘skills’ in NSW).

Table 9.1.

*Domains of Learning (Biology)*

	<b>Knowledge/ Understanding</b>	<b>Investigative Skills</b>	<b>Social/ Environmental</b>	<b>Attitudes/ Values</b>	<b>Communication</b>
ACT	Key Content and Concepts – interdependence, characteristics of life, diversity, adaptations, human impact.	Key Processes – conducting investigations; acquiring and applying biological knowledge.			
NSW	Knowledge and Understanding – cell structure, diversity, interactions, inheritance, evolution.	Skills – planning, conducting investigations, communicating, scientific thinking, working alone and in teams.		Values and Attitudes – positive attitudes, values; evaluate consequences of application of science.	
QLD	Understanding Biology – cells, systems, interdependence, change, equilibrium, inheritance.	Investigating Biology – formulate questions, design studies; collect, interpret, analyse, data; draw conclusions.	Evaluating Biological Issues – evaluate effects on society.	Attitudes and Values – consider attitudes and values.	
SA	Understanding and Problem-Solving – macromolecules, cells, organisms, ecosystems.	Acquiring Knowledge – experiments, hypotheses, record, analyse, evaluate, find information.	Using Knowledge – use of biology knowledge in social contexts.		Communicating Knowledge – use of appropriate language, terminology, notation.
TAS	Knowledge and Understanding – chemical basis of life; cells; organisms; interaction with environment	Select and use technologies; collect, categorise information; plan and complete activities, develop experiments.	Impact of Science on Society and the Environment		Communicate Ideas and Information
VIC	Areas of Study – cells; organisms; adaptations; ecosystems; molecules; detecting and responding; heredity; change.	Investigate and Inquire Scientifically – hypotheses; plan investigations; collect, analyse data; safe practices			Communicate Biological Information and Understandings
WA	Interaction and Interdependence – structure/function, interdependence, diversity of life forms. Flux & Equilibria – change, continuity, evolution.	Investigating and Communicating – frame questions, plan investigations analyse data, draw conclusions, use appropriate language.	Biology in Society – apply understanding to evaluate decisions.		

This preliminary analysis of broad domains of learning suggests that, at least in Biology, there is significant overlap in the general intentions of state and territory curricula. It also suggests that a second step in the development of national curriculum essentials for Biology might be to achieve agreement on a small number of valued domains of learning. These nationally agreed domains would be identified by Biology subject matter experts.

### **Course Structure**

A further consideration in the development of nationally consistent curricula relates to course structure. Existing state and territory syllabuses and curriculum frameworks vary considerably in the extent to which they specify a course structure for Biology.

In the case of NSW, the syllabus is clearly specified. Students studying HSC Biology complete a core consisting of three modules:

- Maintaining a Balance (30 indicative hours)
- Blueprint for Life (30 indicative hours)
- The Search for Better Health (30 indicative hours)

and one option of 30 indicative hours selected from:

- Communication
- Biotechnology
- Genetics: The Code Broken?
- The Human Story
- Biochemistry

Students are required to undertake at least 35 hours of practical activities during Year 12 and to complete at least one open-ended investigation.

In South Australia, the Biology Curriculum Statement does not prescribe topics or areas of study, but provides a set of principles that should be taken into account when courses are designed. It is recommended that at least two of the following three areas of study be incorporated so that students are exposed to a breadth of biological information:

- Cellular Biology
- Physiology
- Ecology

Multi-thematic topics that have social and historical perspective are encouraged.

In the Australian Capital Territory, teachers are given a 'Course Framework' as a basis for developing their own Biology courses. This framework identifies key content, concepts and processes and requires teachers to use a mix of experimental investigation reports, assignments and tests in the assessment of student learning. But no course structure is provided.

We are recommending that, under an Australian Certificate of Education, consideration be given to introducing greater national consistency in relation to

course structures. At the very least, curriculum essentials should include the expected number of hours of study and any major course components. Taking Biology as an example, students in Queensland currently are expected to complete 110 hours of study; students in NSW are expected to complete 120 hours. In Tasmania, students are expected to spend about 45 hours on practical activities; students in NSW are expected to spend at least 35 hours on practical activities. Consideration also should be given to identifying through curriculum standards broad areas of study that all teachers should be expected to cover.

### **Expected Student Learning**

Finally, curriculum essentials should identify core curriculum content that all students taking a subject should have an opportunity to learn. In making this recommendation we are not proposing that all students taking Biology should be expected to develop exactly the same set of understandings, knowledge and skills. But we believe that, in most subjects, there are big ideas, key concepts and principles, essential skills, and fundamental knowledge that all students should expect to encounter in the study of that subject in the senior secondary school. We see these understandings, knowledge and skills making up a ‘core’ of curriculum content that is common across all states and territories.

This ‘core’ could be established by identifying what is common to current Biology syllabuses and curriculum frameworks. This approach may be useful as a starting point, but we believe the core should be more than the ‘lowest common denominator’ of curriculum content. Our recommendation is that the development of curriculum essentials include a mapping of what currently exists and what is common, followed by a review by subject matter specialists who would determine the nature of the core curriculum content.

This process would involve a review of detail of the kind shown in Figure 9.2. This figure outlines the understandings that students are expected to develop in relation to ‘cells’ in the draft Biological Sciences course of study in the new Western Australian Certificate of Education. A question to be addressed in the development of national curriculum essentials for Biology might be how these expectations currently compare with expectations in other states and territories and whether learning expectations of this kind should be included in a set of curriculum essentials.

## CELLS

Cells are the basic units of life. A dynamic balance exists between cells and their environments.

Through the investigation of a variety of different cellular contexts, students will develop understanding of concepts and skills relevant to:

- *the structure and function of cells*

Cells are the basic units of living organisms.

Cells have complex structure and consist of various organelles with particular functions and biochemistry.

Modelling can be used to understand the generalised structure of plant and animal cells and further investigation, particularly with microscopes, can lead to an appreciation of the diversity of cell types.

Photosynthesis and respiration are essential chemical processes for life and require an understanding of the interaction of inorganic compounds like water and carbon dioxide and energy to form organic molecules.

Understanding the nature and role of organic molecules such as carbohydrates, lipids and proteins and an understanding of the catalytic nature of enzymes are important aspects of the biochemistry of cells.

Biochemical pathways are complex and can be influenced by the environmental conditions of the cell.

Cell membranes are important for regulating the movement of molecules throughout the cell.

- *reproduction, genetics and biotechnology*

The gene is the central concept of genetics to which all other concepts can be linked.

DNA is the molecular structure of genes and contains a code that can be translated as instructions for the development and functioning of all living things.

These instructions, through RNA, are primarily for the production of proteins that play key roles in biochemical pathways and the structure of cells.

Chromosomes are the subunits of the entire genome that exists in most cells and chromosomes behave in different ways during mitosis and meiosis to enable cell division for growth and for sexual reproduction.

The history of genetics is comparatively short and demonstrates the focus of research on Mendelian patterns of inheritance in the first half of the twentieth century and then on molecular genetics after the discovery of the structure of DNA in 1953.

Biotechnology can include a range of processes that involve the application of scientific understandings and technology by human beings to influence organisms.

Examples of biotechnology range from selective breeding, artificial insemination and pollination to genetic engineering, which involves the artificial manipulation of the structures and mechanisms of the genome.

These manipulations can have a profound impact on the phenotype of organisms and there are complex ethical considerations for biologists and citizens as a result of this rapidly advancing field of biology.

Figure 9.2. Expected student learning (WACE: Biology, Cells)

## 9.2 Establishing curriculum essentials

We are recommending that the identification of essential elements of subject curricula be the responsibility of a national standards body (see Chapter 13). This body would initiate and oversee the identification of essential curriculum features for a subject, approve these, and undertake occasional reviews and updates of these essential features. The body also would decide on the set of subjects for which curriculum essentials would be developed and the timetable for their development.

It is envisaged that the national standards body would establish subject panels for the purposes of identifying curriculum essentials. Each subject panel would include curriculum and assessment experts and representatives of the relevant professional subject association.

The tasks of the subject panel would be to address the various aspects of subject syllabuses/curricula, with a view to achieving greater national consistency in relation to such matters as:

- the subject rationale;
- broad domains of learning;
- course structure; and
- core curriculum content (knowledge, skills, understandings).

These tasks would entail a detailed analysis of existing state and territory syllabuses and curriculum frameworks. Subject curricula also should be benchmarked against relevant overseas curricula to ensure that course content and expectations are consistent with international expectations.

We are recommending that curriculum essentials be identified in the following subject areas initially, with the relevant subject panels deciding on the specific subjects to be addressed in English (eg, English and English Literature), Mathematics (eg, Advanced and General), and History (eg, Ancient and Modern):

- |             |                          |
|-------------|--------------------------|
| • Biology   | • History                |
| • Chemistry | • Information Technology |
| • Economics | • Mathematics            |
| • English   | • Physics                |
| • Geography |                          |

Several factors have been considered in arriving at this list, including the extent to which the subject is currently offered in all states and territories, the numbers of students taking the subject, and the extent to which the subject provides a foundation for further study. This list is proposed for further consideration. We would not limit the development of curriculum essentials to these areas, but believe that nationally agreed curriculum elements in a set of nominated subjects should be a minimum requirement in an Australian Certificate of Education.

## 10 Achievement standards

Current senior certificates use a variety of different formats to report students' results. In a subject such as Accounting, results in one state may be expressed as marks out of 100, in another as marks out of 50, and in yet another as one of five achievement levels. Currently there is no way of comparing performance in Accounting in one state with performance in any other; there is no way of knowing what study score in Victoria is equivalent to 'Very High Achievement' in Queensland, or how either of these relates to a 'Band 6' performance in Accounting in New South Wales.

Under an Australian Certificate of Education, it should be possible to compare students' performances in a subject such as Accounting across jurisdictions. We believe the most feasible way of doing this is to establish a set of 'achievement standards' in a subject, against which every student's performance in the subject would be reported.

We are not recommending the introduction of a single examination or a single set of assessment processes to be used in all states and territories. Rather, we see the development of a shared set of achievement standards, and the use of those standards in reporting student results as a basis for greater national consistency and comparability at the subject level. If all jurisdictions report results against the same set of subject standards, then there can continue to be flexibility in how evidence is collected (eg, external assessments and/or school-based assessments). Of course, this does not preclude the possibility of jurisdictions choosing to share assessment/examination materials and processes.

### 10.1 Standards referencing

The reporting of student results against achievement standards is already a feature of senior certificates in some jurisdictions. For example, in New South Wales, each student's overall result (mark) in a subject is used to allocate the student to one of six achievement bands. The six achievement bands in Biology are shown in Figure 10.1. Bands 2 to 6 are described standards of achievement, and each year a judgment is made about the mark required on that year's examination to meet the standard of each band. This judgment is made by a group of subject matter specialists who examine all of the questions on the examination in the context of the described bands. In this way, results in any one year can be compared with HSC results in that subject in previous years.<sup>11</sup>

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<sup>11</sup> The standard setting process is described in more detail by (Masters, 2002).

<b>Band 6</b>	<ul style="list-style-type: none"> <li>demonstrates an extensive and detailed knowledge and superior understanding of biological concepts, including complex and abstract ideas</li> <li>demonstrates an extensive understanding of the historical development of biological concepts, their applications and implications for society and the environment, and the future directions of biological research</li> <li>communicates succinctly, logically and sequentially using a variety of scientific formats, including diagrams, graphs, tables, flow charts and equations relating to biology</li> <li>analyses and evaluates data effectively, identifying biological relationships, quantifying explanations and descriptions, synthesising information to draw conclusions</li> <li>uses precise biological terms extensively and correctly in a wide range of contexts</li> <li>designs valid experimental processes using appropriate technologies and incorporating the thorough knowledge of the use of a control, variables and repetition to solve biological problems</li> <li>applies knowledge and information to unfamiliar situations and designs an original solution to a biological problem</li> </ul>
<b>Band 5</b>	<ul style="list-style-type: none"> <li>demonstrates thorough knowledge and understanding of most biological concepts</li> <li>demonstrates a thorough understanding of the historical development of biological concepts and their applications and implications for society and the environment</li> <li>communicates effectively in a variety of scientific formats including diagrams, graphs, tables, flow charts and equations relating to biology</li> <li>explains qualitative and quantitative biological relationships and ideas coherently; identifies patterns in data to draw conclusions</li> <li>uses precise biological terms frequently and correctly in a range of contexts</li> <li>identifies the correct application of scientific experimental methodology to solve biological problems</li> </ul>
<b>Band 4</b>	<ul style="list-style-type: none"> <li>demonstrates sound knowledge and clear understanding of some biological concepts</li> <li>demonstrates a sound understanding of the historical development of biological concepts and their applications for society and the environment</li> <li>communicates using clear written expression and incorporating diagrams of biological structures</li> <li>provides qualitative and quantitative descriptions of biological phenomena and explains straightforward biological relationships</li> <li>uses general biological terms frequently and correctly in a range of contexts</li> <li>identifies the correct components of the experimental scientific method in biology</li> </ul>
<b>Band 3</b>	<ul style="list-style-type: none"> <li>recalls basic knowledge and understanding of some biological concepts</li> <li>demonstrates a basic understanding of the historical development of biological concepts and their applications for society and the environment</li> <li>uses fundamental written communication with some use of simple scientific diagrams relating to biology</li> <li>provides qualitative descriptions of fundamental biological phenomena and explains some straightforward biological relationships</li> <li>uses some general biological terms correctly in a limited range of contexts</li> <li>recalls some aspects of the experimental scientific method in biology</li> </ul>
<b>Band 2</b>	<ul style="list-style-type: none"> <li>recalls limited knowledge and has elementary understanding of some straightforward biological concepts</li> <li>demonstrates a limited understanding of the historical development of biological concepts</li> <li>uses fundamental written communication relating to biology</li> <li>provides simple qualitative descriptions of biological phenomena</li> <li>uses general biological terms occasionally</li> </ul>
<b>Band 1</b>	(not described)

Figure 10.1 Achievement standards (NSW Biology)



Queensland also uses a system of standards referencing. In Biology (Figure 10.2) assessments are made of three aspects of achievement in Biology: Understanding Biology, Investigating Biology, and Evaluating Biological Issues. Student work is assessed against five described levels of achievement, labelled A to E, for each aspect. These three assessments then determine the student's overall result in Biology which also is expressed on a 5-point scale (Very Limited, Limited, Sound, High, Very High Achievement).

	<b>Understanding Biology</b>	<b>Investigating Biology</b>	<b>Evaluating Biological Issues</b>
A	<ul style="list-style-type: none"> <li>• makes links between related ideas, concepts, principles and theories to reveal meaningful interrelationships</li> <li>• applies knowledge and understanding to a range of complex and challenging tasks</li> </ul>	<ul style="list-style-type: none"> <li>• formulates justified researchable questions</li> <li>• designs, modifies and implements investigations</li> <li>• collects and organises data to identify trends and interrelationships</li> <li>• interprets and critically analyses results with links to theoretical concepts to draw conclusions relating to the question(s)</li> <li>• evaluates the design of the investigation and reflects on the adequacy of the data collected and proposes refinements</li> </ul>	<ul style="list-style-type: none"> <li>• gathers, critically analyses and evaluates information and data from a variety of valid and reliable sources</li> <li>• integrates the information and data to make justified and responsible decisions</li> <li>• considers alternatives and predictions relevant in past, present and future biological contexts</li> </ul>
B	<ul style="list-style-type: none"> <li>• explains ideas, concepts, principles and theories and describes interrelationships between them</li> <li>• applies knowledge and understanding to a range of complex tasks</li> </ul>	<ul style="list-style-type: none"> <li>• formulates researchable questions</li> <li>• selects, modifies and implements investigations</li> <li>• collects and organises data to identify trends</li> <li>• interprets results and draws conclusions relating to the question(s)</li> <li>• evaluates the design of the investigation and the adequacy of the data collected</li> </ul>	<ul style="list-style-type: none"> <li>• gathers, analyses and evaluates information and data from a variety of valid and reliable sources</li> <li>• integrates the information and data to make supported decisions</li> <li>• recognises alternatives and predictions that are relevant in a range of present-day biological contexts</li> </ul>
C	<ul style="list-style-type: none"> <li>• defines and describes ideas, concepts, principles and theories, and identifies interrelationships</li> <li>• applies knowledge and understanding to a range of tasks</li> </ul>	<ul style="list-style-type: none"> <li>• identifies researchable questions</li> <li>• selects and implements investigations</li> <li>• collects and organises data</li> <li>• discusses results and draws conclusions</li> </ul>	<ul style="list-style-type: none"> <li>• gathers information and data from a variety of sources</li> <li>• selects relevant information and data to make plausible decisions and predictions in a range of biological contexts</li> <li>• recognises concepts that form the basis of present day biological issues</li> </ul>
D	<ul style="list-style-type: none"> <li>• states ideas and uses terminology relevant to concepts and recalls interrelationships</li> </ul>	<ul style="list-style-type: none"> <li>• follows instructions to collect and organise data</li> <li>• uses data to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>• gathers and uses biological information to make statements</li> <li>• recognises that a given issue has biological implications</li> </ul>
E	<ul style="list-style-type: none"> <li>• states terminology and ideas relevant to concepts</li> </ul>	<ul style="list-style-type: none"> <li>• follows instructions to collect and organise data</li> </ul>	<ul style="list-style-type: none"> <li>• uses supplied information to make statements</li> </ul>

Figure 10.2 Achievement standards (QLD Biology)

Underpinning a student's overall subject result in both Queensland and NSW is a body of evidence that includes test results, projects, assignments and other classroom activities. In Queensland, these are summarised initially in three A to E grades. In NSW, they are summarised in a school assessment mark and an examination mark, both out of 100. Appendix 9 provides an example of a standards referenced report illustrating a set of subject achievement standards and showing the reporting of school, examination and overall marks in terms of these standards.

We are recommending the development of a set of achievement standards—initially in each of the subject areas nominated in Chapter 9—in the form of five described levels labelled E (lowest) to A (highest):

	<i>Students achieving this standard are typically able to:</i>
<b>A</b>	
<b>B</b>	
<b>C</b>	
<b>D</b>	
<b>E</b>	

Figure 10.3 Proposed subject achievement standards

These five achievement standards would provide a common framework for reporting student achievement in a subject. We envisage the knowledge, skills and understandings described in the standards drawing primarily on the core curriculum content identified for that subject.

## 10.2 Development and use of achievement standards

The development of achievement standards also would be a task for the national subject panels. All states and territories currently report students' achievements in a subject on at least a five-point scale. An initial task would be to understand how these existing reporting scales reflect varying levels of knowledge, understanding and skill in a subject. For example, what is demanded of the highest achieving students in each state and territory? To the extent that this question can be answered, it will provide a starting point in

defining what students will have to do to achieve an 'A' in that subject under the ACE.

Where states already use described levels of achievement, these descriptions should feed directly into the work of the relevant subject panel. It may be necessary to study samples of assessed student work to build a more complete understanding of the levels. In states that simply report marks with little or no substantive interpretation, a detailed analysis of student work, including performances on examination questions would be required. The process used by the NSW Board of Studies to develop bands of achievement from an analysis of examination performances in each subject is an example of a methodology that subject panels might use. Some benchmarking of achievement standards against international expectations of student achievement also is desirable.

Once a set of achievement standards in a subject is established, our recommendation is that states and territories use these five standards in the reporting of student results. The highest achieving students in a subject in each state and territory would thus achieve an 'A' (rather than 'Exceptional Achievement' in Tasmania, 'Band 6' in NSW, 'Very High Achievement' in Queensland, and so on). We are not recommending that the five achievement levels be used in place of finer-grained reporting (such as subject marks out of 50), but that they be used to give substantive meaning to marks ranges, as illustrated in Appendix 9.

In each year, it would be the responsibility of each jurisdiction to assign students an A to E result in at least the nominated subjects.

We envisage the national standards body producing and disseminating information about the A to E achievement standards. As well as describing each of the five standards, these materials would provide samples of student work to illustrate each achievement standard. This information could be provided directly to schools or incorporated into standards packages of the kind currently produced in NSW.

Although the approach we are recommending does not require the use of the same subject examination or the same set of assessment processes in all states and territories, we see no reason why, under the umbrella of an Australian Certificate of Education, there might not be more sharing of examinations/assessments by ACE awarding bodies. For example, among jurisdictions that currently use examinations, some sharing of annual examination materials may be possible, thereby freeing up limited resources for other purposes. To the extent that assessment materials and processes are shared, comparability of subject results across awarding bodies would be enhanced.

## 11 General capabilities

As the proportion of young people staying on to the final years of school has increased in recent decades, and with current efforts to achieve near universal participation in this phase of schooling, the nature of Australian senior secondary education itself has changed. The final years of school are much less focused on preparing a minority of students for university education and professional careers, and much more focused on preparing an entire generation of young people for a lifetime of civic engagement, all varieties of employment and ongoing learning. While students now pursue many different pathways during their final years at school, the common focus of senior secondary education is on equipping all young people with the knowledge, skills and attributes required for life, learning and work beyond school.

Learning in the senior secondary years continues to be organised largely around ‘subjects’. The list of senior subjects has been expanded beyond traditional/academic subjects to include a variety of vocational subjects and a large number of alternative courses. But learning—including the development of generic skills and attributes—takes place predominantly within subjects, and students’ accomplishments tend to be reported in the form of subject results. To the extent that they are assessed, students’ general capabilities such as reading literacy, mathematical literacy and the ability to use information and communication technologies, are incorporated into subject results.

We are proposing that students’ development of general capabilities be recognised directly. Rather than being incorporated into subject results, separate assessments of some general capabilities should be made and reported alongside students’ subject results. Some of these capabilities might best be assessed and reported at the school level, but for a small number of key capabilities, we are proposing recognition through a nationally consistent assessment. We envisage the explicit assessment and reporting of general capabilities being an important element of a future Australian Certificate of Education.

### 11.1 A set of general capabilities

Schools, universities and education systems in Australia and overseas have recognised the importance of developing a range of general skills, values, and personal and social competencies. Higher education institutions tend to use the term ‘generic skills’ to refer to general capabilities which include:

- thinking skills such as logical and analytical reasoning, problem solving and intellectual curiosity;
- effective communication skills;
- teamwork skills;
- capacities to identify, access and manage knowledge and information;
- personal attributes such as imagination, creativity and intellectual rigour; and

- values such as ethical practice, persistence, integrity and tolerance  
(Hager et al., 2002, p.2)

In the past the assumption has been that these generic skills will be developed through the higher education experience without explicit attention. Now, increasing emphasis is being placed on making them explicit for students.

A considerable amount of work has been undertaken in the Australian school sector to identify general capabilities that students should develop as a result of schooling. Some of this work is summarised in Appendix 4. General capabilities include skills that will prepare students for a lifetime of learning, enable them to become active citizens, reflective and self-directed learners and to form and maintain family and community relationships.

Employers also have emphasised the importance of general capabilities important in the workplace. In the opinion of a review by the Australian National Training Authority, this emphasis on general capabilities can be understood in terms of the changing nature of workplaces. Jobs today require flexibility, initiative and the ability to undertake many different tasks. Work is not as narrowly prescribed and defined as in the past and jobs generally are more service oriented, making information and social skills increasingly important. Employees must demonstrate teamwork, problem solving, and the capacity to deal with non-routine processes. They also need to be able to make decisions, take responsibility and communicate effectively. Proficiency in a broad range of generic skills has become the main requirement for the modern worker (Australian Chamber of Commerce and Industry & Business Council of Australia, 2002).

A 1999 survey of 350 companies from the manufacturing, construction, and information technology sectors identified a number of generic skills required by Australian industry to remain globally competitive:

- basic skills such as literacy and numeracy;
- interpersonal skills such as communication and teamwork; and
- personal attributes such as the capacity to learn and embrace change.  
(Allen Consultancy Group, 1999)

Building on this work, the Australian Chamber of Commerce and Industry and the Business Council of Australia undertook a study of the skills and attributes commonly required by both new and existing employees to work successfully in organisations. The 'personal attributes' identified included loyalty, personal presentation, commitment, common sense, honesty and integrity, positive self-esteem, enthusiasm, sense of humour, reliability, ability to deal with pressure, balanced attitude to work and home life, adaptability, and motivation. The eight 'employability' skills identified were:

- communication skills that contribute to productive and harmonious relations between employees and customers;
- teamwork skills that contribute to productive working relationships and outcomes;
- problem-solving skills that contribute to productive outcomes;

- initiative and enterprise skills that contribute to innovative outcomes;
  - planning and that contribute to long-term and short-term strategic planning;
  - self-management skills that contribute to employee satisfaction and growth;
  - learning skills that contribute to ongoing improvement and expansion in employee and company operations and outcomes; and
  - technology skills that contribute to effective execution of tasks.
- (Australian Chamber of Commerce and Industry & Business Council of Australia, 2002)

These skills are described in more detail in Table 11.1.

Table 11.1  
*Employability Skills*

<b>Skill</b>	<b>Element</b> (facets of the skill that employers identify as important, noting that the mix and priority of these facets will vary from job to job)
<i>Communication</i> that contributes to productive and harmonious relations between employees and customers	<ul style="list-style-type: none"> <li>• Listening and understanding</li> <li>• Speaking clearly and directly</li> <li>• Writing to the needs of the audience</li> <li>• Negotiating responsively</li> <li>• Reading independently</li> <li>• Empathising</li> <li>• Using numeracy effectively</li> <li>• Understanding the needs of internal and external customers</li> <li>• Persuading effectively</li> <li>• Establishing and using networks</li> <li>• Being assertive</li> <li>• Sharing information</li> <li>• Speaking and writing in languages other than English</li> </ul>
<i>Teamwork</i> that contributes to productive working relationships and outcomes	<ul style="list-style-type: none"> <li>• Working with people of different ages, gender, race, religion or political persuasion</li> <li>• Working as an individual and as a member of a team</li> <li>• Knowing how to define a role as part of a team</li> <li>• Applying teamwork skills to a range of situations eg futures planning, crisis problem solving</li> <li>• Identifying the strengths of team members</li> <li>• Coaching mentoring and giving feedback</li> </ul>

Table 11.1  
(continued)

<i>Problem-solving that contributes to productive outcomes</i>	<ul style="list-style-type: none"> <li>• Developing creative, innovative solutions</li> <li>• Developing practical solutions</li> <li>• Showing independence and initiative in identifying problems and solving them</li> <li>• Solving problems in teams</li> <li>• Applying a range of strategies to problem solving</li> <li>• Using mathematics including budgeting and financial management to solve problems</li> <li>• Applying problem solving strategies across a range of areas</li> <li>• Testing assumptions taking the context of data and circumstances into account</li> <li>• Resolving customer concerns in relation to complex project issues</li> </ul>
<i>Initiative and enterprise that contribute to innovative outcomes</i>	<ul style="list-style-type: none"> <li>• Adapting to new situations</li> <li>• Developing a strategic, creative, long-term vision</li> <li>• Being creative</li> <li>• Identifying opportunities not obvious to others</li> <li>• Translating ideas into action</li> <li>• Generating a range of options</li> <li>• Initiating innovative solutions</li> </ul>
<i>Planning and organising that contribute to long-term and short-term strategic planning;</i>	<ul style="list-style-type: none"> <li>• Managing time and priorities – setting timelines, coordinating tasks for self and with others</li> <li>• Being resourceful</li> <li>• Taking initiative and making decisions</li> <li>• Adapting resource allocations to cope with contingencies</li> <li>• Establishing clear project goals and deliverables</li> <li>• Allocating people and other resources to tasks</li> <li>• Planning the use of resources including time management</li> <li>• Participating in continuous improvement and planning processes</li> <li>• Developing a vision and a proactive plan to accompany it</li> <li>• Predicting – weighing up risk, evaluating alternatives and applying evaluation criteria</li> <li>• Collecting, analysing and organising information</li> <li>• Understanding basic business systems and their relationships</li> </ul>

Table 11.1  
(continued)

<i>Self-management</i> that contributes to employee satisfaction and growth	<ul style="list-style-type: none"> <li>• Having a personal vision and goals</li> <li>• Evaluating and monitoring own performance</li> <li>• Having knowledge and confidence in own ideas and vision</li> <li>• Articulating own ideas and vision</li> <li>• Taking responsibility</li> </ul>
<i>Learning</i> that contributes to ongoing improvement and expansion in employee and company operations and outcomes;	<ul style="list-style-type: none"> <li>• Managing own learning</li> <li>• Contributing to the learning community at the workplace</li> <li>• Using a range of mediums to learn – mentoring, peer support, networking, information technology (IT) courses</li> <li>• Applying learning to ‘technical’ issues (eg learning about products) and ‘people’ issues (eg interpersonal and cultural aspects of work)</li> <li>• Having enthusiasm for ongoing learning</li> <li>• Being willing to learn in any setting – on and off the job</li> <li>• Being open to new ideas and techniques</li> <li>• Being prepared to invest time and effort in learning new skills</li> <li>• Acknowledging the need to learn in order to accommodate change</li> </ul>
<i>Technology</i> that contributes to effective execution of task	<ul style="list-style-type: none"> <li>• Having a range of basic IT skills</li> <li>• Applying IT as a management tool</li> <li>• Using IT to organise data</li> <li>• Being willing to learn new IT skills</li> <li>• Having the occupational health and safety knowledge to apply technology</li> <li>• Having the appropriate physical capacity</li> </ul>

We are recommending that, as part of the Australian Certificate of Education, greater attention be paid to developing, assessing and reporting on a range of general capabilities. We see particular value in supporting schools to assess and report student progress in relation to the employability skills listed in Table 11.1. The assessment of a number of these skills (eg, teamwork, initiative and enterprise, self-management, learning) may require direct observations of young people’s performances in schools and workplaces. The work of McCurry (2003) and the Victorian Curriculum and Assessment Authority may provide a model for making and recording such observations. Further work will be required to develop and investigate valid and reliable ways of assessing all eight employability skills.



## 11.2 Key capabilities

In the literature and in our national consultations, a few capabilities have been identified as being of particular importance. These capabilities sometimes are referred to as the ‘basics’ because they underpin other capabilities and are required in most areas of learning, life and work. They include reading literacy, mathematical literacy (numeracy), written English, and ICT literacy, but other capabilities such as interpersonal understanding and self-management sometimes are added to this list of ‘basics’.

We are proposing the introduction of a national test of a small number of key capabilities. This test, which we are proposing be called the Key Capabilities Assessment (KCA), would be an essential component of the Australian Certificate of Education and would be taken by all students in their final year of school, perhaps near the middle of the year. Initially, the KCA would assess four key capabilities:

- Reading Literacy
- Mathematical Literacy
- Written English
- ICT Literacy

We envisage each of the four tests in the Key Capabilities Assessment being more than a test of minimum competence. Each test would be designed to be accessible to all students. Material early in the test would be relatively easy, allowing most students to experience some success; material later in the test would challenge more capable students and provide useful measures of their higher levels of ability.

Detailed specifications for the four KCA tests would have to be developed by the proposed national standards body (Chapter 13). These specifications would guide decisions about test format, test length, feasibility of future computer-based delivery, and so on.

The Reading Literacy test would in part be a measure of literal and inferential reading comprehension. It would be based on a variety of texts and would establish students’ levels of reading ability. But we envisage this test going beyond basic text comprehension and assessing advanced verbal reasoning along the lines of the Victorian General Achievement Test (GAT) and ACT Scaling Test (AST). It should be challenging for, and differentiate among, students with relatively high levels of verbal ability. The OECD/PISA definition of Reading Literacy as the ability not only to understand, but also to reflect on, and reason about, text (Figure 11.1) is consistent with this intention.

The Mathematical Literacy test would in part be a measure of students’ abilities to apply basic mathematical knowledge and processes to everyday problems. It would not be a test of what is taught in senior secondary mathematics, but a test of the ability to use mathematical principles and concepts in the solution of problems. We envisage the test going beyond the assessment of basic numeracy skills to assess quantitative reasoning, again

along the lines of the GAT and AST. This test, too, should be challenging for, and differentiate among, students with relatively high levels of quantitative ability. The OECD/PISA focus on the ability to apply mathematical concepts to everyday problems and to reason mathematically (Figure 11.2) is broadly consistent with the kind of test we envisage.

OECD/PISA definition of Reading Literacy:

*Reading literacy is understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential and to participate in society.*

This definition goes beyond the notion of reading literacy as decoding and literal comprehension: it implies that reading literacy involves understanding, using and reflecting on written information for a variety of purposes. It thus takes into account the active and interactive role of the reader in gaining meaning from written texts. The definition also recognises the full scope of situations in which reading literacy plays a role for young adults, from private to public, from school to work, from active citizenship to lifelong learning. It spells out the idea that literacy enables the fulfilment of individual aspirations—from defined aspirations such as gaining an educational qualification or obtaining a job, to those less immediate goals which enrich and extend one's personal life. Literacy also provides the reader with a set of linguistic tools that are increasingly important for meeting the demands of modern societies with their formal institutions, large bureaucracies and complex legal systems.

Literacy is no longer considered an ability only acquired in childhood during the early years of schooling. Instead, it is viewed as an expanding set of knowledge, skills and strategies which individuals build on throughout life in various situations, and through interaction with their peers and with the larger communities in which they participate.

*Figure 11.1 Reading literacy (OECD/PISA)*

The Written English test would assess students' abilities to write for specific purposes. As well as being an assessment of the ability to generate, structure and communicate ideas and information, this test would assess students' control of spelling, punctuation and grammar.

The ICT Literacy test would assess students' abilities to use ICT to access, manage and evaluate information. A considerable amount of work has been undertaken in recent years to conceptualise and define ICT Literacy skills. We envisage this test drawing on that body of work, which includes the work of the MCEETYA Performance Measurement and Reporting Taskforce (Figure 11.3).

The Key Capabilities Assessment would be developed annually by the national standards body. All test materials would be trial tested prior to use and subjected to rigorous review for possible gender and cultural bias. The four KCA tests would be completed under specified and supervised conditions, as currently occurs for tests such as the Queensland Core Skills Test, Victorian GAT and ACT Scaling Test. The national standards body would oversee marking, data analysis and report generation.

OECD/PISA definition of Mathematical Literacy:

*Mathematical literacy is an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-informed judgements and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen.*

Mathematical literacy is concerned with the capacities of students to analyse, reason, and communicate ideas effectively as they pose, formulate, solve and interpret mathematical problems in a variety of situations. The OECD/PISA assessment of mathematical literacy focuses on real-world problems, moving beyond the kinds of situations and problems typically encountered in school classrooms. In real-world settings, citizens regularly face situations when shopping, travelling, cooking, dealing with their personal finances, judging political issues, etc, in which the use of quantitative or spatial reasoning or other mathematical competencies would help clarify, formulate or solve a problem. Such uses of mathematics are based on the skills learned and practised through the kinds of problems that typically appear in school textbooks and classrooms. However, they demand the ability to apply those skills in a less structured context, where the directions are not so clear and where the student must make decisions about what knowledge may be relevant, and how it might usefully be applied.

*Figure 11.2 Mathematical literacy (OECD/PISA)*

Under this recommendation, there would be significant overlap between the proposed KCA and some existing state and territory tests, particularly the Victorian GAT and ACT Scaling Test. Individual jurisdictions would need to decide whether the KCA could be used for the purposes currently served by local tests, in which case they could be discontinued.

### **11.3 Reporting and using KCA results**

Our reason for recommending the introduction of the Key Capabilities Assessment is that we believe there would be value in having a direct, nationally consistent measure of each student's achievement of these few fundamental skills. (As noted above, we also believe there would be value in developing better assessments of a broader set of capabilities, particularly the eight employability skills, and are recommending that further work be done to explore how these might be assessed and used.) Because we attach importance to the recognition of students' key capabilities, we are proposing that results on the four KCA tests be reported on students' statements of results, alongside their other ACE results.

Ideally, results on each of the four KCA tests would be standards-referenced in the sense that levels of achievement (perhaps labelled A to E) would be described and illustrated for each of the key capabilities. The standards-referenced reporting of reading, mathematical and scientific literacy achievements in PISA provides a model.

MCEETYA PMRT definition of ICT Literacy:

*ICT Literacy is the ability of individuals to use ICT appropriately to access, manage and evaluate information, develop new understandings, and communicate with others in order to participate effectively in society.*

The decision to focus on ICT literacy as an essential skill across all learning areas, for all students, reflects the wide prevalence and use of ICT in society and the value of ICT literate citizens.

The ICT literacy domain includes six processes:

- *accessing information* - identifying the information needed and knowing how to find and retrieve information.
- *managing information* - organising and storing information for retrieval and reuse.
- *evaluating* - reflecting on the processes used to design and construct ICT solutions and making judgements regarding the integrity, relevance and usefulness of information.
- *developing new understandings* - creating information and knowledge by synthesising, adapting, applying, designing, inventing or authoring.
- *communicating with others* - exchanging information by sharing knowledge and creating information products to suit the audience, the context and the medium.
- *using ICT appropriately* - making critical, reflective and strategic ICT decisions and using ICT responsibly by considering social, legal and ethical issues.

The elements of the ICT literacy definition have been clustered into three strands:

- *working with information* - This strand includes identifying the information needed; formulating and executing a strategy to find information; making judgements about the integrity of the source and content of the information; and organising and storing information for retrieval and reuse.
- *creating and sharing information* - This strand includes adapting and authoring information; analysing and making choices about the nature of the information product; reframing and expanding existing information to develop new understandings; and collaborating and communicating with others.
- *using ICT responsibly* - This strand includes understanding the capacity of ICT to impact on individuals and society, and the consequent responsibility to use and communicate information legally and ethically.

Figure 11.3 ICT literacy (MCEETYA PMRT)

We expect that reliable measures of reading literacy / verbal reasoning, mathematical literacy / quantitative reasoning, Written English, and ICT Literacy will be of direct value to users of the Australian Certificate of Education, including employers and universities.

Once the KCA is available, there is also the possibility of using KCA results for moderation purposes. There are various ways in which this could be done (see Appendix 5). For example, in the ACT and Victoria, the KCA could be used in the same way that AST and GAT are currently used.

The KCA also could be used to improve levels of comparability of student results in a subject across states and territories. We are proposing the use of described ‘achievement standards’ (Chapter 10) as the primary basis for establishing comparability within a subject across jurisdictions. However, the availability of the KCA as a common test introduces the possibility of using KCA results as a check on levels of comparability. Figure 11.4 describes one way in which this could be done.

The process of developing and aligning achievement standards for an ACE subject might involve a number of separate, but interrelated steps.

1. A set of ‘achievement standards’ (labelled A to E) for the subject would be developed by the relevant national subject panel.
2. Examples of student performances and work at each achievement standard would be collected from across the states and territories to illustrate each of the five (A to E) standards.
3. States and territories that report on finer-grained scales (eg, marks out of 50 or marks out of 100) would establish annually the ranges on their scales corresponding to the A to E standards. (This could be done using a standard-setting technique such as the Angoff or Bookmark method to identify cut-scores). The national percentage of students achieving each of the A to E standards could be monitored over time.
4. The components of the KCA that best relate to the subject would be used to generate a total score (KCA+) for each student. The distribution of KCA+ scores then would be compared with the distribution of subject results in each state and territory. (For example, if 10% of students nationally achieved an A in the subject, then the KCA+ score achieved by 10% of students nationally could be identified and the percentage of students who scored above that KCA+ score in each jurisdiction could be compared with the percentage awarded an A in the jurisdiction).

*Figure 11.4 Possible process for developing and aligning achievement standards in an ACE subject*

Finally, the availability of a national Key Capabilities Assessment opens up the possibility of improving attempts to make ENTER scores comparable across states and territories. Currently, the statistical process used in the equating makes an assumption that the distribution of student achievements is the same in all jurisdictions. This assumption is implausible given other evidence of between-state differences (eg, PISA) and is almost certainly introducing a bias into the process. The availability of a national test in the form of the proposed KCA has the potential to circumvent this assumption and to improve the comparability of university ENTER scores.

## 12 Recognition of excellence

As well as providing a wide variety of courses and learning opportunities to meet the diverse needs of students participating in the final years of secondary school, an Australian Certificate of Education must encourage and recognise excellence in student achievement at the highest international standards.

We see value in providing an annual ACE Award of Excellence to students who meet high standards in their school subjects and in the Key Capabilities Assessment. This award would sit alongside the ACE certificate. The national standards body would work with State and Territory authorities to establish the level at which the award would be offered, and State and Territory authorities would identify students in each jurisdiction meeting these nationally specified high standards. The award would be issued by the Australian Minister for Education, Science and Training.

### 12.1 Existing awards

Across Australia, excellence in Year 12 achievement already is recognised in a number of ways. In some states, an additional certificate—the ‘Premier’s excellence award’ in Victoria and the ‘Minister’s award for excellence in student achievement’ in NSW—recognises exceptional performance. In Victoria, students with scores of 46 or higher (out of a maximum of 50) in at least five VCE studies receive the Premier’s award. In NSW, in addition to academic achievement, sporting and cultural achievements and leadership and contribution to the school community are taken into consideration. These additional criteria aim to recognise students’ commitment to learning, a positive personal belief system and morality, positive human relationships and civic responsibility.

The Australian Vocational Student Prize recognises excellence in Vocational Education and Training in Schools programs or School-based New Apprenticeships. To be eligible, students must demonstrate outstanding skill and high achievement; high to exceptional levels of determination and commitment to achieve outstanding outcomes; and outstanding employability skills (communication, team work, problem-solving, initiative and enterprise, planning and organising, self-management, learning and technology skills). The prize, a certificate and \$2000, is awarded to 450 students in Vocational Education and Training in Schools across Australia annually, with an additional 50 prizes awarded to the most outstanding School-based New Apprentices.

The Department of Education, Science and Training recognises outstanding academic excellence and achievement in the final year of secondary education, and outstanding achievement in the International Mathematics, Informatics, Physics, Chemistry and Biology Olympiads, through the award of the Australian Students Prize. The prize, a certificate and \$2000, is awarded to

500 students each year. Students are nominated by State and Territory Ministers of Education on the basis of criteria decided by each State or Territory assessment board and submitted to the Australian Government prior to the start of the selection process. Prizes are allocated in proportion to state/territory Year 12 populations and are conferred by the Australian Government Minister for Education, Science and Training.

The recognition of academic excellence through special certificates and awards is also an international practice. For example, the British Columbia ‘Premier’s excellence award’ is similar to the NSW award. It recognises the best all-round Grade 12 graduate (academic excellence, community service, and school service and participation) in each region of the Province and is intended to encourage talented and dedicated British Columbians to pursue advanced academic studies in British Columbia post-secondary institutions.

It is important to note, however, that these excellence awards are limited in number and tend to celebrate only exceptional achievement. For example, in NSW only forty awards are offered; in British Columbia only fifteen (one for each college region).

## **12.2 An ACE Award of Excellence**

We are proposing the introduction of a national certificate to be known as the ACE Award of Excellence. This certificate, which would be awarded by the Australian Government Minister for Education, Science and Training, would be awarded to students who meet high standards of achievement in their school subjects and on the Key Capabilities Assessment. We envisage this certificate not as a ‘prize’ for a small number of exceptional achievers, but as an Award of Excellence that could be available to up to ten per cent of Year 12 students.

Students meeting the criteria for the ACE Award of Excellence in each state and territory would be identified by the relevant local authority and the Award would be prepared and distributed by the national standards body on behalf of the Minister.

We also are recommending that the current Australian Students Prize, provided to 500 students annually by the Australian Government, be awarded as the ‘ACE Prize’ to students achieving outstanding results in the Australian Certificate of Education. As at present, ACE Prize recipients would be identified by state and territory authorities.

## 13 A national standards body

The introduction of an Australian Certificate of Education will require national coordination. In particular, each of our recommended steps to introduce the ACE will have to be overseen and managed, and some aspects of the Australian Certificate of Education will require ongoing development and monitoring.

Tasks requiring national coordination include:

- the identification of curriculum essentials in nominated subject areas;
- the development of achievement standards in nominated subject areas;
- the annual development and analysis of the Key Capabilities Assessment; and
- the annual identification and preparation of ACE Awards of Excellence.

We are recommending the introduction of a national standards body with responsibility for setting and maintaining nationally consistent high standards for the Australian Certificate of Education. This body would have a small secretariat/executive and a governing Board reporting to the Australian Minister for Education, Science and Training.<sup>12</sup> Members of the governing Board would be appointed by the Minister, but might be expected to include one or more representatives of the ACACA agencies.

### **Convening Subject Panels**

The standards body will convene national subject panels. These panels, one for each of the nominated subject areas initially, will include subject matter and assessment specialists and representatives of the relevant professional association/s. The tasks of each subject panel will be to propose essential elements of the subject curriculum—including the identification of a core of common curriculum content for the subject—and to propose national achievement standards for the reporting of student results. In performing these tasks, the subject panels will undertake some benchmarking of standards against international expectations for student learning. The national subject panels will set initial standards, but also will be convened on a regular basis to review and revise curriculum essentials and achievement standards.

### **Endorsing Proposed Standards**

Each set of curriculum essentials and achievement standards proposed by the national subject panels will require formal endorsement by the Board.

### **Key Capabilities Assessment**

The standards body also will commission the annual development and administration of the Key Capabilities Assessment. The standards body will oversee test development and trial testing, approve the final test forms,

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<sup>12</sup> We are imagining the national standards body being established along the lines of the recently established Carrick Institute for teaching and learning in higher education and Teaching Australia (the National Institute for Quality Teaching and School Leadership).



organise test printing and distribution, oversee marking, and provide scores on the Key Capabilities Assessment to the ACACA agencies for inclusion on students' statements of results.

Results on the Key Capabilities Assessment also may be analysed with students' subject results to assist subject panels in their efforts to ensure nationally comparable subject results (implementing at the national level a process similar to the way in which the General Achievement Test currently is used in Victoria).

### **ACE Awards of Excellence**

The national standards body will be responsible for generating and distributing ACE Awards of Excellence on behalf of the Australian Minister for Education, Science and Training. The standards body will decide on the criteria for the ACE Award of Excellence, which will take account of performance in ACE subjects as well as on the Key Capabilities Assessment.

### **Clearinghouse on Senior Secondary Education**

Finally, the national standards body will function as a clearinghouse for new ideas/developments in senior secondary education. It will communicate information about national developments in the ACE to schools, other education and training institutions, employers and the public. As part of its charter to set and maintain nationally consistent high standards for the Australian Certificate of Education, the national standards body may from time to time recommend to the Minister other national initiatives capable of enhancing the ACE and the quality of senior secondary provision generally.

### **Timeline**

Once established, the national standards body would:

- convene national Subject Panels in English, mathematics and selected science and social science/humanities subjects; and
- commission the development of the Key Capabilities Assessment.

A possible implementation timeline is:

- 2006 – (interim) national standards body established
  - first national subject panels convened and commence work
  - work on the Key Capabilities Assessment commissioned
- 2007 – small scale trial of Key Capabilities Assessment
  - draft curriculum essentials and achievement standards produced for some subjects
  - guidelines for ACE Award of Excellence developed
- 2008 – large scale trial of Key Capabilities Assessment
  - work on curriculum essentials and achievement standards continues
  - first ACE Awards of Excellence
- 2009 – implementation of curriculum essentials and achievement standards
  - implementation of Key Capabilities Assessment
  - national subject panels move to monitoring and review phase

## 14 A single certificate

Our final recommendation is that, once agreement has been reached to incorporate essential curriculum content in at least the nominated subject areas, to report against common achievement standards in those subjects, and to incorporate the Key Capabilities Assessment, existing senior certificates be eligible to be known as the ‘Australian Certificate of Education’.

We envisage the eight current ACACA agencies awarding the Australian Certificate of Education as proposed in Table 14.1.

Table 14.1

*Proposed National Certificate*

<b>Current/proposed</b>	<b>Future</b>
ACT Year 12 Certificate	Australian Certificate of Education (ACT)
Higher School Certificate	Australian Certificate of Education (NSW)
Northern Territory Certificate of Education	Australian Certificate of Education (NT)
Queensland Certificate of Education	Australian Certificate of Education (QLD)
South Australian Certificate of Education	Australian Certificate of Education (SA)
Tasmanian Certificate of Education	Australian Certificate of Education (TAS)
Victorian Certificate of Education	Australian Certificate of Education (VIC)
Western Australian Certificate of Education	Australian Certificate of Education (WA)

The ACACA agencies would continue to function as at present, developing local syllabuses or curriculum frameworks, developing and administering examinations and/or assessments, and providing students with certificates and statements of results. We envisage very little change to ACACA agency operations. However, to be eligible to become the Australian Certificate of Education, current senior certificates would have to meet the following requirements.

### 14.1 Requirements

#### **Purposes**

There would need to be agreement on the broad purposes of the ACE. These purposes would include encouraging participation in the final years of school; providing learning opportunities to meet the varying needs, interests and abilities of students in this phase of schooling; offering world class curricula; setting high expectations for student achievement; and developing skills and attributes required for life and work beyond school.

The stated purposes of the current NSW certificate provide a starting point in reaching agreement on the broad purposes of an ACE:

- to provide a curriculum structure that encourages students to complete secondary education;
- to foster the intellectual, social and moral development of students, in particular developing their:
  - knowledge, skills, understanding and attitudes in the fields of study they choose
  - capacity to manage their own learning
  - desire to continue learning in formal or informal settings after school
  - capacity to work together with others
  - respect for the cultural diversity of Australian society;
- to provide a flexible structure within which students can prepare for:
  - further education and training
  - employment
  - full and active participation as citizens
- to provide formal assessment and certification of students' achievements; and
- to provide a context within which schools also have the opportunity to foster students' physical and spiritual development.

Under our proposal, the Australian Certificate of Education offered in each jurisdiction would be flexible enough to allow innovation to meet local needs and diverse enough to meet the varying interests and abilities of students participating in the final years of school.

### **Minimum Requirements for Award**

Agreement would have to be reached on the minimum requirements for the award of the Australian Certificate of Education. As noted in Chapter 7, requirements for the award of existing senior certificates vary considerably from one jurisdiction to another. A responsibility of the proposed national standards body would be to establish minimum requirements for the award of the Australian Certificate of Education across all states and territories.

### **Curriculum Essentials**

Before a senior certificate would be eligible to become the Australian Certificate of Education, nationally agreed curriculum essentials would need to be met in at least the set of nominated subjects. The common curriculum elements for each subject would be proposed by the relevant subject panel and endorsed by the national standards body. As discussed in Chapter 9, curriculum essentials might include such features as the subject rationale, broad domains of learning in the subject, elements of course structure, and core curriculum content.

### **Achievement Standards**

A further requirement would be that student results, at least in the nominated subject areas, be reported in ways that allow a level of comparison to be made

across awarding bodies. As discussed in Chapter 10, the comparison of subject results might be achieved through a mapping of each jurisdiction's results on to a nationally agreed standards framework for the subject.

### **Key Capabilities Assessment**

Finally, the Australian Certificate of Education would include a nationally consistent assessment of a small number of key capabilities such as reading literacy, mathematical literacy, written English, and ICT literacy. The Key Capabilities Assessment would be undertaken by all students enrolled in the ACE.

## **14.2 Pathways**

With the exception of Victoria, existing state/territory certificates are designed to cater for all students in the final years of school. Within the certificate, students pursue different pathways, including pathways that lead to higher education, apprenticeships, TAFE and directly into employment, with learning occurring in a variety of contexts including schools, workplaces and community settings. In Victoria, there are currently two certificates: the Victorian Certificate of Education (VCE) and the Victorian Certificate of Applied Learning (VCAL). The VCAL provides practical, hands-on experience and is designed for students interested in going on to training at TAFE, undertaking an apprenticeship, or entering the workforce upon leaving school.

The Victorian Certificate of Applied Learning would not be eligible to become the Australian Certificate of Education as we have envisaged it. However, we see value in bringing all existing senior certificates under the umbrella of the Australian Certificate of Education and so are proposing that, with the incorporation of the requirement that students undertaking the VCAL complete the Key Capabilities Assessment, the VCAL be known as the Australian Certificate of Education (Applied).

Table 14.2

*Proposed ACE (Applied)*

<b>Current</b>	<b>Future</b>
Victorian Certificate of Applied Learning	Australian Certificate of Education (Applied)

This recommendation parallels the introduction of the Irish Leaving Certificate (Applied) which sits alongside the Leaving Certificate as a distinct, self-contained two-year program aimed at preparing students for adult and working life. The program puts an emphasis on forms of achievement and excellence which the established Leaving Certificate has not recognised in the past.

### **14.3 Awarding the certificate**

We envisage each of the eight awarding bodies for the Australian Certificate of Education issuing the ACE to students who meet the agreed minimum requirements for the award of the Certificate. The physical certificate that students receive probably should follow an agreed format and be very similar in appearance across awarding bodies. Each certificate would identify the awarding body issuing the certificate.

Each of the eight awarding bodies also would issue students with a statement of results that would include subject results and results on the Key Capabilities Assessment.

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## Appendix 1. Senior secondary certificate of education: AQF guidelines

The Australian Qualifications Framework (AQF) is a national qualifications system endorsed by the Australian Government. The Senior Secondary Certificate of Education is a recognised qualification under the AQF. Each of the state/territory senior certificates is a Senior Secondary Certificate of Education.

### Senior Secondary Certificate of Education

#### 1. *Purpose*

To assist employers, employees, professional associations, unions, curriculum developers, accrediting bodies and the wider public, including students, parents, and education and training bodies, to understand factors determining the level of the qualification.

#### 2. *Context*

Senior Secondary Certificates of Education (local titles are used at State/Territory level) certify the completion of secondary education.

#### 3. *Learning Outcomes*

##### 1. *Authority*

At a State/Territory level, requirements for the Senior Secondary Certificate of Education are set by statutory authorities which are responsible for the development and accreditation of courses of study, assessment, issuance of the qualification and associated quality assurance and consultative processes.

##### 2. *Characteristics*

The characteristics of learning outcomes at this level include the knowledge, skills and understandings, both generic and subject-specific, required as a basic preparation for civic life, work and life long learning. These are developed through studies that may include academic disciplines, vocational education and training, and community based learning.

#### 4. *Responsibility for Assessment*

In each State/Territory, statutory authorities are responsible for determining assessment requirements and ensuring that assessment standards are maintained through appropriate quality assurance processes. The work of the statutory authorities is underpinned by nationally agreed principles of integrity and quality in assessment and certification.

#### 5. *Pathways to, through and from the Qualification*

Entry to this qualification normally requires the equivalent of Year 10. Adult students may undertake the qualification without necessarily

having completed Year 10 and in most States/Territories may receive recognition for prior learning.

Pathways through the qualification may include:

- Full-Time School Study
- A two-year post Year 10 Senior Secondary School Certificate of Education program.
- Schools/TAFE Programs
- A Senior Secondary School Certificate of Education program incorporating units of competency from a National Training Package or recognising other community based learning.
- A combination of an accredited course of study and credit for prior learning which may include a formally recognised program or other learning achieved by an individual, meeting the quality assurance requirements of the senior secondary certificate.

These examples suggest only some of a wide range of possible programs of study. They are not intended to be prescriptive, nor are they limited to this particular qualification.

Time taken to gain the qualification will vary according to the pathway taken but typically requires two years of full-time study (normally Years 11 and 12) although students who are able to meet the requirements may commence studies in earlier years. Longer part-time programs are available in most States. Some States specify a limit of 5 years for the completion of the certificate requirements; others have no limits.

Pathways for students who complete the requirements of the Certificate can include higher education, vocational education and training and direct entry to the workforce or a combination thereof.

6. *Authority to Issue the Qualification*

The Senior Secondary Certificate of Education is issued in each State/Territory by a statutory authority.

7. *Certification Issued*

A qualification is:

*formal certification, issued by a relevant approved body, in recognition that a person has achieved learning outcomes relevant to identified individual, professional, industry or community needs.*

Each State/Territory has legislative responsibility for authorising the issue of the Certificate. These qualifications may be referred to using a number of local titles at State/Territory level.

Individuals who complete some of the requirements for the Certificate will receive a record of their achievements.

The State/Territory statutory authorities are responsible for providing and maintaining records in relation to the above.

## Appendix 2. The International Baccalaureate Diploma Program

The International Baccalaureate Organisation (IBO) is a non-profit educational foundation based in Geneva, Switzerland. Its general objectives from its inception have been to provide students with a balanced education, to facilitate geographic and cultural mobility, and to promote international understanding through a shared academic experience.

The IB offers three programs:

- The Primary Years Programme (PYP) for students aged 3 to 12;
- The Middle Years Programme (MYP) for students aged 11 to 16;
- The Diploma Programme (DP) for students in the final two years before university.

The IBO's Diploma Programme began in 1968. It is administered from the International Baccalaureate Offices in Geneva and Cardiff and examined by an international body of examiners representing various countries and cultural traditions. The DP is a demanding two-year pre-university course for highly motivated 16- to 19-year-olds that includes requirements that students study a second language, undertake community service and write a 4000-word essay. It is taught in about 1300 schools around the world (International Baccalaureate Organisation, 2005a).

The IB Diploma is currently recognised by about 3700 universities worldwide including Harvard, Oxford, Stanford and Yale. The majority of students undertaking the Diploma Programme are from international schools, for which the program was initiated; but nearly 50 per cent of DP candidates now come from state or national education systems.

In 2004, 60 000 students were enrolled in the Diploma worldwide. In Australia, 2764 students in more than 30 schools registered for the DP in 2005, with 1219 of these in Victoria, the state where it is most widely offered. Thirty four independent schools in Australia and five government schools currently offer the DP. The Diploma Programme costs each student about \$800, while schools pay about \$11 000 a year to offer the course.

Only schools authorised by the central IBO office in Geneva, Switzerland, are eligible to teach the curriculum and to register candidates for examination. The IBO has four regional offices as well as regional representatives in various locations around the world. For Australia, the regional office is in Singapore. Regional offices provide a range of support and monitoring services for prospective and existing IB schools, including: advice on the authorisation process, teacher training programs, regional conferences, evaluations (every five years) of IB schools' programs including the DP, and advice on assessment procedures. These regional offices also provide information and advice to universities and governments on the DP content and requirements,

the incorporation of the DP into state educational systems and the recognition of the Diploma by higher education institutions.

## **Ethos and principles**

### **International Mindedness**

The IB Diploma is offered in English, French and Spanish. Because of the common curriculum, students are able to transfer from one IB school to another, in the same or another country. International mobility is thus a key element of the program.

The pragmatic focus of the DP on international transferability, and on the recognition of the qualification by universities worldwide, is underpinned by a more philosophical emphasis on international mindedness. This ethos is described as ‘unapologetically idealistic’: a belief that ‘education can foster understanding among young people around the world, enabling future generations to live more peacefully and productively than before’ (International Baccalaureate Organisation, 2002).

The IB curricula emphasise study of issues of global concern, and are directed towards developing ‘world citizens’. One example of this is the DP requirement that all students study and complete examinations in at least two languages.

International-mindedness is fostered in teachers by various means, including:

- participation in professional development events organised by the IBO, and participation in sub-regional associations where colleagues from different cultures and nationalities share ideas and practices;
- participation in the DP curriculum development and/or examining process as an assistant examiner, team leader, and/or deputy chief examiner; and
- the exchange of ideas in discussion forums on the online curriculum centre (web site for teachers).

### **Service**

The IB DP includes a non-academic component – creativity, action, service (CAS) – which aims to educate the whole person, ‘fostering a more compassionate and active citizenry’ (International Baccalaureate Organisation, 2005a). Students must complete 150 hours in community service, sport and a creative pursuit such as music.

### **Academic Rigour**

The IB DP describes itself as ‘a demanding pre-university course of study that leads to examinations (with) a reputation for rigorous assessment, giving IB diploma holders access to the world’s leading universities’ (International Baccalaureate Organisation, 2005a). It is designed for students with both the motivation and the ability to succeed in the academic setting of universities.

Part of its academic rigour is the requirement for all students to write an Extended Essay of 4000 words on a topic of their choice. This component

requires original research, and is intended to help students prepare for the independent research and writing expected at university.

The DP also includes Theory of Knowledge (TOK), an interdisciplinary requirement (involving at least 100 hours of teaching) intended to stimulate critical reflection on knowledge and experience gained inside and outside the classroom. This component is unique to the IBO and mandatory for every DP student.

### **Values**

In addition to international mindedness, the IB DP – along with the other IB programs – aims to develop in students an understanding of the nature and value of their own culture; a recognition and development of universal human values (mediated through the Theory of Knowledge course and the CAS requirement); and a spirit of discovery and enjoyment of learning.

## **Curriculum**

The IB DP is based on a ‘hexagon model’: a program core accompanied by six subject groups. Each student is required to take six subjects.

The six subject groups are:

- First language (including the study of selections of world literature);
- Second language (modern or classical);
- Individuals and societies (business and management; economics; geography; history; Islamic history; information technology in a global society; philosophy; psychology; social and cultural anthropology);
- Experimental sciences (biology, chemistry, physics, environmental, design technology);
- Mathematics (compulsory) and computer sciences (elective); and
- The arts (visual arts, music, theatre arts).

Students are required to select one subject from each of the first five groups. Their sixth subject may be either from Group 6, an additional subject from Groups 1 to 5, or an optional sixth subject designed by schools in consultation with IBO staff.

Three or four of these subjects are studied at Higher Level (240 hours); the remainder at Standard Level (150 hours). These requirements ensure breadth of curriculum for all students.

The core of the IB Diploma model consists of three additional required components:

- the Theory of Knowledge (TOK) course, which explores the nature of knowledge across all disciplines and encourages an appreciation of other cultural perspectives;
- the Extended Essay (4000 words maximum), where students investigate a topic of individual interest; and

- creativity, action, service (CAS), which encourages student involvement in non-academic areas: artistic pursuits, sports and community service work.

## **Assessment**

### **Criterion-based Assessment**

Assessment in the DP is criterion related, with each student's final subject result determined by the level of their performance against criteria developed and published by the IBO. These criteria describe the level of achievement expected for the award of each grade.

### **Internal and External Assessment Components**

Assessment is conducted by classroom teachers, international examiners accredited by the IBO, and the IBO's own staff.

Internally assessed work usually counts for a minimum of 20% of the final grade in a subject. This is carried out within the school by teachers who mark individual pieces of work produced as part of the course of study.

External examinations, held in May and November each year, are the major component (up to 80%) of the overall assessment for each subject. All examinations are developed by the IBO.

Senior examiners trained and accredited by the IBO monitor the marking of all examiners.

### **Examinations: Marking and Maintenance of Consistency**

It is the IBO's central control of the examination process which permits consistency of standards across school and countries.

According to the IBO, examinations are the major part of the assessment 'because of the greater degree of objectivity and reliability provided by the standard examination environment and external marking' (International Baccalaureate Organisation, 2005a). For each of the two administrations (May for the Northern hemisphere; November for the Southern hemisphere), identical examination papers across the world, prepared by the IBO, are used for each subject to ensure parity of assessment for the DP. Curriculum and assessment for the DP are organised through the IB Curriculum and Assessment Centre in Cardiff, Wales. The Cardiff office also has responsibility for the final drafts of examination papers, typesetting, formatting, printing and shipment to schools.

Moderation is the principal tool for ensuring marking reliability. Senior examiners accredited by the IBO convene after each examination session to oversee assessment in their subjects and to award grades. For examination paper components, the moderation sample size is 15% of each examiner's total allocation of scripts (International Baccalaureate Organisation, 2004).



Other tasks undertaken by students over an extended period, with the guidance of their teachers, are also externally marked by examiners, to maximise objectivity in marking. The assessment focus for all of these is on the quality of a finished written product, which makes them suitable for external assessment. These include such tasks as written language and literature assignments, music investigations, theory of knowledge essays and extended essays.

For internally assessed work, IBO evaluates teachers' marks by sampling work from every school, and may adjust them to maintain international parity.

## **Accreditation and acceptance by tertiary institutions**

### **Components of the IB Result**

Students' performances in each subject are graded on a scale of 1 to 7. In addition, a maximum of three points are available for combined performance in the Extended Essay and Theory of Knowledge. CAS does not contribute to the points total, but authenticated participation in CAS is a requirement without which the Diploma cannot be awarded. Thus, the maximum possible score is 45 points. The minimum score necessary to be awarded the Diploma normally is 24 points. Students who fail the DP receive statements of achievement.

Students who successfully complete individual IB subjects, but not the full Diploma, are awarded IB certificates in the course(s) studied.

### **Recognition in the Tertiary and other Sectors in Various Countries**

The Diploma Programme claims to be the leading learner-oriented pre-university international qualification currently available. The IBO maintains a database of universities that recognise the IB diploma and the universities' requirements for admission. A measure of the international standing of the DP is its current recognition by about 3700 universities including Harvard, Oxford, Stanford and Yale.

In North America, some IB courses are recognised as equivalent to university/college-level courses, and universities and colleges may award entering students with first-year credit for high IB exam scores (ie, 'Advanced Placement'). Many universities in the United Kingdom accept the IB Diploma on a par with A-levels. In other parts of the world, the IB Diploma is used only to assess a student's suitability to enter university. In some countries, for example Turkey and Peru, it is not considered equivalent to the national end-of-school examination scheme, usually because the IB Diploma is not as specialised or because certain subjects are not offered.

The IB Diploma is recognised by 42 universities and higher education institutions in Australia (International Baccalaureate Organisation, 2005b). Each state has a conversion scale for relating IB DP scores to tertiary entrance rankings (Victorian Tertiary Admissions Centre, 2005). In Victoria, this conversion is recalculated every year, and based on performance in the GAT (Victorian Tertiary Admissions Centre, 2005); Western Australia and

Tasmania use the Victorian conversion<sup>13</sup>. The maximum DP score of 45 (obtained by roughly 0.2% of the worldwide cohort in 2002) appears to equate annually to an ENTER/UAI/TER score of 99.95 (Monash University, 2005; South Australian Tertiary Admissions Centre, 2005), and the same UAC Rank in New South Wales (Association of Australasian International Baccalaureate Schools (AAIBS), 2005). In Queensland the maximum IB score is equated to a QTAC Rank of 99. The minimum pass score of 24 equated in 2004 to a notional ENTER (Victoria) score of 79.95; a TER (SA/NT) of 71.40 (Monash University, 2005; South Australian Tertiary Admissions Centre, 2005) a QTAC Rank of 79 and a UAC rank of 78.85.

IB Diploma holders will, from 2007, also qualify for the Queensland Certificate of Education and can include IB certificate subjects as part of their qualification (International Baccalaureate Organisation, 2005a).

If candidates choose not to fulfil all parts of the programme, they can receive only a certificate. The status of certificates awarded to students who successfully complete individual Diploma subjects is unclear. Unlike the recognition accorded the Diploma, there is no universal recognition for these certificates.

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<sup>13</sup> Personal communication, Greg Valentine, Regional Representative for Australasia of the International Baccalaureate Asia Pacific.

## Appendix 3. Scholastic aptitude tests

### United States of America

The majority of colleges in the US require students to take admissions tests. However, the practice is not universal. In 1999, about 85 percent of colleges required students to take such tests (Schneider & Dorans, 1999). Highly selective colleges are more likely to require admissions test scores than less selective colleges (Schneider & Dorans, 1999).

The most commonly used test is the Scholastic Assessment Test (SAT), which is also the most widely known and extensively researched aptitude test for selection into higher education (McDonald et al., 2001). The American College Test (ACT) is its main competitor. A survey of 360 colleges by (Smyth, 1995) showed that, while colleges tended to accept either the SAT or the ACT, highly selective colleges were more likely to require the SAT.

The SAT is intended to assess potential for higher education study by measuring ‘verbal and mathematical reasoning abilities which develop over time’ (College Board, 1999b)<sup>14</sup>. The ACT assesses achievement in major areas of the high school curriculum and is more directly related to students’ educational progress (McDonald et al., 2001). Research by Schneider and Dorans (1999) showed that SAT and ACT scores have a correlation of about 0.9, meaning that while these two tests purport to be different, they appear to measure similar underlying constructs.

#### Scholastic Assessment Test (SAT)

##### *Test history*

When the SAT was first offered in the United States in 1926, it was called the Scholastic Aptitude Test and addressed two dimensions: verbal reasoning and mathematical reasoning, and comprised nine subtests: seven assessing verbal reasoning (definitions, classification, artificial language, antonyms, analogies, logical inference and paragraph reading) and two assessing mathematical reasoning (number series and arithmetical problems).

Since 1926 the SAT, which had its genesis in intelligence tests developed in the early 1900s, has been revised to focus on abilities required for success in college, and to be more closely aligned with school curricula. However, given that there is no national US school curriculum or examination, and given that students applying for entry into higher education come from school backgrounds where there is no common curriculum, changes to the construct have taken place within significant constraints. By 1946 most of the original SAT test questions had been replaced by English and language arts questions

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<sup>14</sup> A number of studies have investigated the use of SAT or SAT-type admissions tests in the admissions process, for example, (Rooney & Schaeffer, 1998; Schaffner, 1985).

(Loret, 1960). Between 1958 and 1994, changes were relatively minor, involving some alterations in format and testing time.

In 1994 the test was renamed the Scholastic Assessment Test 1: Reasoning Test (SATI: Reasoning Test). One of the reasons for changing the name was mounting evidence that African Americans and other ethnic and social groups consistently scored lower on the SAT. The use of the word 'aptitude' implied that the SAT measured innate differences (McDonald et al., 2001) and 'suggested that blacks might suffer from some sort of innate disability' (Jencks, 1998). Substantial changes to the test also occurred at this time (Curley & May, 1991). These changes took seriously the recommendation of the (Commission on New Possibilities for the Admissions Testing Program, 1990) to 'approximate more closely the skills used in college and high school work'. The version of the test that emerged after 1994 still assessed verbal and mathematical reasoning dimensions. However, it was lengthened by fifteen minutes to enable more emphasis on critical reading and to allow students to complete more items.

#### *Verbal reasoning*

In 1994, questions based on a pair of related passages were added to the SATI: Reasoning Test to assess students' abilities to compare and contrast different writing styles and points of view. Verbal analogies and sentence completion questions were retained, but antonyms were dropped. Greater emphasis was placed on assessing vocabulary in context. More than half the verbal items were based on assessing reading passages which were designed to be more accessible and engaging (Bridgeman et al., 2000). The Test of Standard Written English (TSWE) was dropped and replaced by a separate test which also included English composition, called the SATII: Writing Test.

In 2005 there were further changes to the SATI: Reasoning Test to align it with current high school curricula and to address skills needed for success in college. The analogies section was replaced by more questions on critical reading based on both short and long reading passages from a variety of fields, including the sciences and the humanities. A writing section was introduced to assess students' abilities to identify sentence errors, improve sentences and improve paragraphs. Students now complete an essay that requires them to take a position on an issue and to use reasoning and examples to support their position. The essay assesses basic writing skills, not creative writing ability.

#### *Mathematical reasoning*

Prior to 1994, the mathematics component of the SAT assessed arithmetic, algebraic and geometric reasoning. Two major changes to the test were made in 1994: some items requiring students to produce their own responses were introduced, and the use of calculators was encouraged. These changes were made in part to strengthen the relationship between the test and mathematics curricula (Braswell, 1991). The impetus for the changes came from the report of the National Council of Teachers of Mathematics (NCTM) which suggested that increased attention in the mathematics curriculum should be given to the use of real world problems; probability and statistics; problem solving, reasoning and analysing applications of learning to new contexts; and, solving

problems that were not multiple-choice (Lawrence et al., 2003). All of these changes had the effect of increasing the emphasis on problem solving in mathematics.

From 2005, items from more advanced courses such as those covered in second-year algebra courses were included (Lawrence et al., 2003). The concepts tested also include matrices, absolute value, rational equations and inequalities, radical equations and geometric notation.

Another development has been the introduction of a second series of tests (the SATII: Subject Tests). These tests have been developed from the College Board's Achievement Tests and are based on the core subject areas: English, mathematics, natural sciences, social studies and languages. The SATII: Subject Tests measure knowledge and skills in particular subjects and the ability to apply that knowledge (College Board, 1999a). One argument for introducing the SATII: Subject Tests was that the SATI: Reasoning Tests, by themselves, were considered biased (Barrett & Depinet, 1994; McClelland, 1973). The SATII's closer link to school subjects—although not to a particular well-defined curriculum—was an attempt to make the SAT less vulnerable to complaints of test bias (Bridgeman et al., 2001).

#### *Test composition*

Table A3.1 shows how the format and content of the verbal component of SATI: Reasoning Test changed between 1958 and 2002 (Lawrence et al., 2003).

Table A3.1

#### *Composition of SATI verbal reasoning 1958-2002*

Subtest	Items			
	1958 - 1974	1974 - 1978	1978 - 1994	1994 - 2002
Antonyms	18	25	25	-
Analogies	19	20	20	19
Sentence Completions	18	15	15	19
Reading Comprehension	35	25	25	-
Critical Reading	-	-	-	40
<b>TOTAL</b>	<b>90</b>	<b>85</b>	<b>85</b>	<b>78</b>

Table A3.2 shows how the format and content of the mathematical component of SATI: Reasoning Test changed between 1942 and 2002 (Lawrence et al., 2003).

Table A3.2

*Composition of SATI mathematical reasoning 1942-2002*

<b>Subtest</b>	<b>Items</b>			
	1942 - 1959	1959 - 1974	1974 - 1994	1994 - 2002
Multiple Choice	48	42	40	35
Data Sufficiency	12	18	-	-
Quantitative Compariso	-	-	20	15
Student Produced Response	-	-	-	10
<b>TOTAL</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>

Table A3.2 shows the components of the 2005 SATI.

Table A3.3

*Overview of the 2005 SATI reasoning test*

<b>Component</b>	<b>Time</b>	<b>Content</b>	<b>Item types</b>
Critical reading	70 min. (two 25-min. sections and one 20-min. section)	Critical reading and sentence-level reading	Reading comprehension, sentence completions, and paragraph-length critical reading
Mathematics	70 min. (two 25-min. sections and one 20-min. section)	Number and operations; algebra and functions; geometry; statistics, probability, and data analysis	Five-choice multiple-choice questions and student-produced responses
Writing	60 min.	Grammar, usage, and word choice	Multiple choice questions (35 min.) and student-written essay (25 min.)

*Test scores*

Prior to 2005, the SAT provided two scores: a verbal reasoning score and a mathematical reasoning score. These were reported as scaled scores with a mean of 500 and a standard deviation of 110. From 2005, the SAT has provided three scores (Critical Reading, Mathematics, Writing) each on a scale of 200-800, with Writing providing two sub-scores.

Before 1941 there was no attempt to equate different versions of the SAT. In 1941 a decision was made to equate all subsequent versions of the SAT to the April 1941 version. The linking is carried out using a procedure in which each

new version of the SAT includes approximately 20 percent of items from a previous version (Wainer, 1999).

As the population of students taking the SAT changed over the years, the average score varied from the initial (1941) mean of 500. In 1995, the mean verbal score was 428 on the original SAT scale and the mean mathematics score was 482 (Bridgeman et al., 2000). In response to this change in the scores, adjustments were made to the SATI: Reasoning Test in April 1995. Scores were realigned so that the score on both dimensions (verbal and mathematical) was once again 500.

The equating of scores allows comparisons of standards to be made over time. It also enables the scaled scores of students who have taken different versions of the SAT to be directly compared.

#### *Use of results*

SAT scores usually are combined with school results in the form of high school class rank (HSCR) and grade point average (GPA). Scores are weighted in a regression analysis in an attempt to maximise the prediction of college success.

In 1999, the US College Board explored the decision making processes that college admissions tutors employ (Perfetto, c1999). Two models emerged from discussion with 50 admissions tutors: an eligibility model and a selective model. Under the eligibility model students are selected on the basis of objective criteria which are public. Under the selective model comparisons are made on the basis of 'personal qualities' (including attributes such as motivation and perseverance), educational disadvantage (eg, attending a very poor high school); and potential to contribute (eg, to the wider society, sports teams and financially to their college education). In some institutions, many factors are considered at the same time, with each assigned a different weight<sup>15</sup>.

### **American College Test (ACT)**

#### *Test history*

The ACT was first offered in 1959 with an enhanced system introduced in 1989. The enhanced system was designed to make the ACT more technically and conceptually robust. Prior to 1989, the ACT was considered to be technically inferior to the SAT (Anastasi, 1982). Enhancements included giving more emphasis to measuring reading skills and strengthening the scientific reasoning component.

#### *Test composition*

The ACT, measures knowledge, understandings and skills developed through school curricula. It is comprised of four subtests: English, mathematics, reading and scientific reasoning.

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<sup>15</sup> When Singapore considered introducing an aptitude test to its university admission system, the need for flexibility was recognised. Models were proposed to allow students to enter via different routes: for example, mature-age students and those with international qualifications (McDonald et al., 2001).

The English subtest measures understandings of standard written English conventions and rhetorical skills (McDonald et al., 2001). The Mathematics subtest measures mathematical skills expected of a typical Grade 12 student, but does not assess complex formulae. The Reading subtest measures reading comprehension skills. Students have to derive meaning from four prose passages on different topics: social studies, natural sciences, prose fiction and the humanities. The Scientific Reasoning subtest measures interpretation, reasoning, analysis and problem solving in scientific contexts.

Table A3.4 shows the composition of the ACT.

Table A3.4

*Composition of the American College Test*

<b>Subtest</b>	<b>Items</b>
English	75
Mathematics	60
Reading Comprehension	40
Scientific Reasoning	40
<b>TOTAL</b>	<b>215</b>

#### *Test scores*

Each of the ACT subtest scores is reported on a 36-point scale, with a mean of approximately 18 and a standard deviation of approximately 7. A total score generally is produced by averaging the scores on the four subtests (Murphy & Davidshofer, 1994).

#### *Use of results*

Eighty-five percent of colleges that use the ACT tend to use the total score (McDonald et al., 2001)

## **Israel**

### **Psychometric Entrance Test (PET)**

#### *Test history*

As the demand for higher education increased in Israel, many higher education institutions began to develop and administer their own scholastic aptitude tests that were less dependent on applicants having studied a specific curriculum. In response to this demand the National Institute for Testing and Evaluation (NITE) was established in 1981 by the Association of University Heads to centralise the preparation and administration of university entrance tests, most notably the Psychometric Entrance Test (Beller, 1994).

#### *Test composition*

Like the SAT, the PET is designed to measure students' potential for higher education. The PET is comprised of three sub-tests: Verbal Reasoning,



Quantitative Reasoning and English as a Foreign Language (National Institute for Testing and Evaluation, 2004).

Verbal Reasoning assesses the ability to perceive fine distinctions in meanings among words and concepts, the ability to analyse and understand complex passages, and the ability to think clearly and methodically. Within the Verbal Reasoning component:

- (i) Analogy items assess the ability to define precisely a connection or relationship between two words;
- (ii) Sentence Completion items assess the ability to recognise logical connections between parts of a sentence and to understand what the sentence is saying;
- (iii) Logic items assess the ability to arrive at correct conclusions based on provided information; and
- (iv) Reading Comprehension items assess the ability to understand text, to perceive the relationship between its component parts and to understand the ideas expressed in it.

Quantitative Reasoning assesses the ability to use numbers and mathematical concepts to solve quantitative problems and to analyse data presented in the form of graphs, tables and charts.

English as a Foreign Language assesses proficiency in the English language including vocabulary and the ability to read and understand complex sentences and texts at an academic level. Within the English as a Foreign Language component:

- (i) Sentence Completion items assess English vocabulary and the use of English words in a given context;
- (ii) Restatement items assess the ability to understand complex English sentences that are worded in different ways; and
- (iii) Reading Comprehension items assess the ability to read and understand short texts taken from various fields.

Table A3.5 shows the composition of the Israeli PET.

Table A3.5

*Composition of the Israeli Psychometric Entrance Test*

Subtest	Items
Verbal Reasoning	60
Quantitative Reasoning	50
English as a Foreign Language	54
TOTAL	164

### *Test scores*

Scores on each subtest are reported on a scale of 50-150. A total score on a scale of 200-800 (mean: 500, standard deviation: 100) is calculated by weighting (40:40:20) the subtest scores.

Donlan (1984) and Nevo and Oren (1996) report that the correlation between the verbal and mathematical sections of the SAT is very similar to that between the corresponding sections of the PET.

### *Use of test results*

Israeli higher education institutions use the PET total score, sometimes with subtest scores. Institutions usually also take into account matriculation scores derived from the national subject-based examinations taken at the end of high school. The score for each subject is an average of a school assessment and a score on the external examination in the subject (Beller, 1994). Different institutions give different weights to PET and matriculation scores in producing a General Acceptance Score.

## **Sweden**

### **Swedish National Aptitude Test (SweSAT)**

#### *Test history*

The first national university aptitude test was introduced into Sweden in 1977. Before 1977, the Year 12 leaving examination was the main basis for selection into higher education. The initial versions of SweSAT (up until 1990) were used to provide an estimate of academic potential for young adults who had been in the workforce for several years, and whose academic grades were thought to underestimate the likelihood of their success in university study (National Agency for Higher Education, 2002).

The SweSAT is designed to meet a number of requirements. It must:

- be consistent with the objectives and content of higher education and have relevance for the higher education sector;
- allow individuals to improve their test scores by prior mechanical practice or by learning any special principles for working out solutions;
- be constructed so that test takers feel that the SweSAT is a suitable instrument for selection to higher education programs;
- make every effort to ensure no discrimination because of social origin or gender; and
- be capable of being graded rapidly using objective and cost-effective methods.

#### *Test composition*

The SweSAT is designed to assess general aptitude for tertiary study. It measures verbal and mathematical abilities developed over time, both in and outside of school. The test content does not reflect any specific curriculum,

although it is designed to be consistent with school-based learning (Department of Educational Measurement: Umea University, 2005).

The SweSAT consists of six sub-tests (Stage, 2005):

Vocabulary (WORD) measures understanding of words and concepts, and consists of items where the task is to identify which of five presented words has the same meaning as a given word. Both Swedish and foreign words are included.

Data Sufficiency (DS) measures numerical reasoning ability. In each item a problem is presented, and the task is to decide whether the information presented is sufficient to allow the solution of the problem. The response format is fixed, so each item presents the same five alternatives. The sub-test is designed to put as little premium as possible on knowledge and skills in favour of problem solving and reasoning.

Reading Comprehension (READ) measures Swedish reading comprehension in a broad sense. Students are presented with six texts and four multiple-choice items about each text. Some items ask about particular pieces of information but most items are designed to assess understanding of larger parts of the text or the text in its entirety.

Interpretation of Diagrams, Tables and Maps (DTM) consists of 10 collections of tables, diagrams and/or maps which present information about a topic, with two multiple-choice items about each collection. The complexity of the items varies from reading off a presented graph to combining information from different sources.

General Information (GI) measures knowledge and information from many different areas. This subtest is broader than traditional school achievement tests and tests information that that may be acquired over an extended period of time in a variety of contexts including work, education, social and cultural activities.

English Reading Comprehension (ERC) is of the same general type as the sub-test READ. However, in this subtest there is more variability in texts and item formats. The test consists of 8 to 10 texts of different lengths followed by one or more multiple-choice items. In one of the texts, some words are omitted and the examinee is asked to select the omitted word from four alternatives presented alongside the text (Stage, 2005).

Table A3.6 shows the composition of the SweSAT.

Table A3.6

*Composition of the Swedish National Aptitude Test*

<b>Subtest</b>	<b>Items</b>
Vocabulary (Word)	30
Data Sufficiency (DS)	20
Reading Comprehension (READ)	24
Interpretation of Diagrams, Tables and Maps (DTM)	20
General Information (GI)	30
English Reading Comprehension (ERC)	24
<b>Total</b>	<b>148</b>

*Test scores*

The SweSAT total score is obtained by adding scores on the subtests. These are then transformed to a standard scale from 0.0 to 2.0 where 2.0 is the highest result.

In November 2001, the National Agency for Higher Education commissioned a project to evaluate the SweSAT. One of the major recommendations was that students should be provided with verbal reasoning and quantitative reasoning SweSAT scores. The reason given is that the predictive validity of SweSAT for particular courses of study is likely to be higher when scores are differently weighted for different courses of study.

*Use of results*

Until 1991, the SweSAT was used only for the selection of ‘individuals who lacked comparable school-leaving qualifications but had attained the age of 25 and had at least four years of vocational experience’ (National Agency for Higher Education, 2002). Since 1991, all applicants have been given the opportunity to take the SweSAT as an alternative to averaging marks across school subjects. One reason for extending the use of the SweSAT was the belief that the test would minimise the socio-economic differences that had been shown to exist when using school grades for selection into higher education programs.

There is no attempt to combine SweSAT scores with school grades. Rather, applicants can use either their school marks or their SweSAT results, whichever is the most favourable, provided that their upper secondary program provides eligibility to higher education. In this way SweSAT gives students who have not managed to perform well at school a second chance of being admitted to higher education. Approximately 60 per cent of places are offered on the basis of school marks and the remaining 40 per cent, on the basis of SweSAT (Stage, 2005).

One of the recommendations of the evaluation was that ‘the decision rule for how the SweSAT scores and grades are used should be reconsidered. In the

current model, grades and test scores are considered separately. A selection model that simultaneously considers grades and test scores should be investigated' (National Agency for Higher Education, 2002).

## Australia

### *Test history*

Australia has a long history in general and differential ability testing. The first such test was the non-verbal test of general ability produced in 1936 by the Australian Council for Educational Research (ACER). The most recent is the Aptitude Profile Test Series (APTS) released in 2000.

Most of the early tests developed in Australia were derived from intelligence tests. However, in the 1960s a different type of test was developed in response to a perceived need to develop programs for the award of scholarships and selection into tertiary institutions. These tests are best described as cross-curricular tests because they assess the general skills that underpin broad educational domains.

The first test of this type was the Commonwealth Secondary Scholarship Examination (CSSE) developed to identify academically able Year 10 students for the award of scholarship support in their final years of secondary school (Whitford et al., 1967).

The CSSE performed a dual function: to determine whether students had the basic intellectual skills to complete secondary education, and to identify whether these students would be successful in later, more demanding academic studies. This meant that the transferable skills needed for success in higher education had to be identified and directly assessed by the CSSE. (Radford, 1964) described the abilities critical to success in further academic studies as those that are developed within a single course of study but which are transferable from one course of study to another.

The Tertiary Education Entry Project (TEEP) evolved from the CSSE to assess skills and abilities that would predict success in higher education courses. The first version of TEEP, administered in 1968, consisted of five subtests: quantitative reasoning; comprehension and reasoning in the physical and biological sciences; comprehension and reasoning in the social sciences; and understanding and interpretation in the arts and humanities.

The Australian Scholastic Aptitude Test (ASAT) reflected this distinctive approach to cross-curricular testing. More recently, the Australian Scaling Test (AST), Special Tertiary Admissions Test (STAT), Australian Law Schools Entrance Test (ALSET), Graduate Australian Medical School Admissions Test (GAMSAT), Undergraduate Medicine and Health Sciences Admissions Test and General Achievement Test (GAT) have followed the same general model. The Queensland Core Skills Test (QCST) also has features in common with these tests.

## Australian Scholastic Aptitude Test (ASAT)

### *Test history*

The Australian Scholastic Aptitude Test (ASAT) was first administered in Australia in 1970. Like the CSSE and TEEP tests, ASAT was based on a variety of stimulus material. The intention was that when ASAT results were combined with an assessment of school work, the combination would predict success in higher education at least as well as traditional external examinations (Connell, 1980).

In its first version, ASAT was a 3-hour test. It later became a 4-hour test in two 2-hour sections.

### *Test composition*

The stimulus material for ASAT was drawn from the humanities, social sciences, sciences and mathematics. Test items were designed to measure abilities of comprehension, interpretation and reasoning.

Table A3.7 shows the composition of the ASAT.

Table A3.7

*Composition of Australian Scholastic Aptitude Test*

Subtest	Items
Humanities	30
Social Sciences	20
Mathematics	20
Sciences	30
TOTAL	100

### *Test scores*

ASAT provided scores on the four subtests and a total score. Subtest scores were made available to Australian states using ASAT so that they could produce whatever composite scores they required.

### *Use of test results*

ASAT initially was designed as a measure of aptitude for university study. The test later was used primarily as a common test for equating results in different school subjects. It also was used to statistically moderate school-based assessments.

Queensland and the ACT used ASAT to place school-based assessments on a common scale. Western Australia used ASAT to place results in different subjects on a common scale. In that state, 10 per cent of each student's ASAT score was also added to the subject aggregate to produce a Tertiary Entrance Score.

## **The Australian Capital Territory Scaling Test (AST)**

### *Test history*

The first AST test, a derivative of ASAT, was administered in 1992. In addition to the original ASAT subtests, AST includes a writing test which was added to the ASAT battery in 1985, and a short answer question test added in 2004. The AST is used in the moderation of school-based assessments within and across colleges in the Australian Capital Territory.

### *Test composition*

The AST consists of a multiple-choice test (2.5 hours), a short response test (1.5 hours) and a writing test (2.5 hours). The Multiple Choice Test is made up of 80 items grouped into units, each based on a piece of stimulus material. The test materials are drawn from the humanities, social sciences, sciences and mathematics. The Short Response Test is made up of 15 - 20 items testing thinking and reasoning. It requires interpretations, explanations and justification of responses or points of view. The Writing Task Students presents material on a particular topic and requires a clear argumentative essay of 600 words.

### *Use of test results*

The ACT has a system of school-based curriculum and assessment. All students in Year 12 who wish to gain a University Admissions Index must complete all parts of the AST. The AST is used to bring students' school-based assessments on to a common scale (see Appendix 5).

## **General Achievement Test (GAT)**

### *Test history*

The Victorian General Achievement Test was introduced in 1993 to assess cross-curricular skills underpinning the Victorian Certificate of Education. The GAT is closely related to the CSSE, TEEP and ASAT tests, although the four ASAT subtests have been reconstituted into two broad domains: Reasoning in Mathematics, Science and Technology (MST) and Reasoning in the Humanities, Arts and Social Sciences (HASS).

### *Test composition*

Table A3.8 lists some of the features that tend to characterise reasoning in the MST and HASS domains.

### *Test scores*

A total GAT score is obtained by summing scores on the sub-tests. Separate standardised scores (mean: 30, standard deviation: 7) also are provided for MST, HASS and Writing. Different composites of scores are calculated and used for the variety of purposes for which the GAT is used in the higher education admissions process.

### *Use of test results*

The Victorian Curriculum and Assessment Authority (VCAA) currently uses GAT scores to

- statistically moderate school assessments before they are combined with examination scores for inclusion in the Tertiary Entrance Score (TES);
- derive examination scores in those subjects for which a student's performance on an examination is affected by accident, sickness or misadventure;
- review school assessments in school assessed tasks; and
- check the accuracy of examination marking. If there is a significant difference between a student's examination score and the predicted score, then the examination score is reassessed.

Table A3.8

### *Reasoning within the MST and HASS domains*

<b>Mathematics, Science &amp; Technology</b>	<b>Humanities, Arts &amp; Social Sciences</b>
logical and formal reasoning	critical and informal reasoning
logico-deductive reasoning	plausible reasoning
analysis, application and problem solving	comprehension, interpretation and assessment
objective	opinionative
convergent	divergent
matters of fact	matters of value
the physical and material world	the socio-cultural world

Table A3.9 shows the composition of the GAT.

Table A3.9

### *Composition of the General Achievement Test*

<b>Subtest</b>	<b>Items</b>
Humanities, Arts, Social Sciences (HASS)	35
Mathematics, Science, Technology (MST)	35
Writing Task 1	20
Writing Task 2	20
TOTAL	110

### **The Queensland Core Skills (QCS) Test**

The QCS Test is a statewide test for Queensland Year 12 students. Students who are eligible for an Overall Position (OP) must sit the test. Students who



are not OP-eligible may sit the test and have an individual result on the Senior Certificate.

The test is based on 49 ‘curriculum elements’: generic skills that have been identified through an analysis of the Queensland senior curriculum. While the test assumes basic levels of general knowledge and vocabulary and a Year 10 knowledge of mathematical operations, the level of sophistication demanded by the test is appropriate to Year 12 students. Particular knowledge of specific Year 12 subjects is not tested.

### *Test history*

The QCS Test was introduced in 1992 following the recommendations of the Viviani Report on tertiary entrance in Queensland. (Viviani, 1990) recommended that the QCS test should:

- test basic English expression and numeracy, extended written expression involving analysis and synthesis, and problem solving in mathematics;
- enable the scaling of Overall Positions and Field Positions (FPs);
- be derived from the curriculum rather than acting to set the curriculum;
- involve three forms of testing: extended writing, short written answers, and multiple-choice questions;
- be substantially different from ASAT; and
- test some different attributes.

### *Test composition*

The test is conducted over 2 consecutive days and consists of four papers. The writing paper (2 hours) requires students to produce an extended piece of continuous prose of about 600 words. In the short-response paper (2 hours) students respond by writing sentences or paragraphs, drawing diagrams, performing calculations, etc. Two multiple-choice papers (1.5 hours each) contain questions based on a variety of stimulus material, such as prose passages, poetry, graphs, tables, maps, mathematical and scientific data, cartoons and reproductions of works of art.

The QCS Test measures five aspects of achievement referred to as ‘criteria’ (see Table A3.10).

Each of the five criteria represents a coherent set of the 49 common curriculum elements. For example, ‘apply techniques and procedures’ includes all the mathematics-specific common curriculum elements: calculating with or without calculators; estimating numerical magnitude; approximating numerical value; substituting in formulae; structuring/organising a mathematical argument; applying a progression of steps to achieve the required answer; identifying shapes in two and three dimensions. Mathematics-related common curriculum elements are contained in various other criteria: interpreting the meaning of tables or diagrams or maps or graphs (in comprehend and collect); perceiving patterns, visualising (in structure and sequence); deducing, extrapolating, generalising (in analyse, assess and conclude); compiling lists/statistics, compiling results in tabular form, graphing (in create and present).

Table A3.10  
*Criteria of Queensland Core Skills Test*

Criterion	Elaboration
comprehend and collect	<ul style="list-style-type: none"> <li>• Comprehend facts and literal meanings over a wide range of material;</li> <li>• Extract information, clarify it, and transform it to display meaning.</li> </ul>
structure and sequence	<ul style="list-style-type: none"> <li>• Select/sort relevant, subtle and/or obscure information from a wide range of materials and then sequence it logically and organise it systematically;</li> <li>• Discern complex patterns and relationships from verbal, pictorial, tabular, graphical and symbolic text.</li> </ul>
analyse, assess and conclude	<ul style="list-style-type: none"> <li>• Deduce and induce subtle causal and other relationships between factors from interrelated material;</li> <li>• Identify the essence and suitably evaluate the worth of multi-faceted, complex arguments, verbal and mathematical;</li> <li>• Draw conclusions through evaluation of a wide range of materials thus: <ul style="list-style-type: none"> <li>- evaluate explicit and implicit assumptions, distinguish factors, evince and assess principles, predicts conclusions</li> <li>- consider many possibilities from a wide range of complicated material in making sound judgments.</li> </ul> </li> </ul>
create and present	<ul style="list-style-type: none"> <li>• Demonstrate a confident and flexible proficiency with written language, a skilled and effective control of structure, and a consistent ability to develop, clearly and sensitively, a relevant central idea;</li> <li>• Write effectively and accurately;</li> <li>• Produce clear, coherent and accurate information of the highest visual appeal.</li> </ul>
apply techniques and procedures	<ul style="list-style-type: none"> <li>• Determine and use appropriate techniques for making exact and approximate calculations;</li> <li>• Solve problems involving a number of pieces of information.</li> </ul>

#### *Test scores*

The total QCS score is converted to a grade from A (highest) to E. The statewide distribution of grades is not predetermined, but is ascertained by setting numerical cutoffs after analysis of student performance on the five criteria.

### *Use of test results*

The QCS test is used for two purposes: to provide a test result for each candidate, and to provide information for the calculation of the student's tertiary entrance rank (Overall Position, OP) and up to five Field Positions (FPs). The calculation of the tertiary entrance rank involves two stages of scaling: between subject-groups within a school, and between schools. Scaling aims to remove bias that may be caused by differences between subjects and schools.

## Appendix 4. General capabilities

This appendix reviews some recent initiatives to identify, develop and assess ‘generic’ or cross-curricular capabilities important to life, work and learning beyond schools. General capabilities increasingly are conceptualised as life long learning skills and attributes developed in a range of settings including work and life settings, and educational contexts. Many different terms are used to refer to capabilities of this kind. Some of these are listed in Table A4.1.

Table A4.1  
*Terms for General Capabilities*

Country	Term
Australia	Key competencies, employability skills, generic skills
Canada	Employability skills
Denmark	Process independent qualifications
France	Transferable skills
Germany	Key qualifications
Singapore	Critical enabling skills
Switzerland	Trans-disciplinary goals
New Zealand	Essential skills
United Kingdom	Core skills, key skills, common skills
United States	Basic skills, necessary skills, workplace know-how

### Australian developments

All Australian states and territories have given recent attention to the development of ‘generic skills’. This is particularly true in the compulsory years of school.

#### **Tasmania (P-10)**

Tasmania’s ‘Essential Learnings’ identify five ‘foundations’:

##### *1. Thinking*

Inquiring and reflective thinkers are able to reason, question, make decisions and solve complex problems. They are empathetic and are able to make ethical decisions about issues, events and actions.

- **Inquiry:** Understands the process of inquiry and uses appropriate techniques for posing questions, defining problems, processing and evaluating data, interacting critically with communications created by others, interpreting linguistic, numerical and graphic information with judgment and discernment.

- Being literate: Understands, uses and critically evaluates non-verbal, spoken conclusions and flexibly applies findings to further learning and to create new solutions.
- Reflective thinking: Understands that reflective thinking is a deliberate process, affected by emotions and motivations, and that it is used to develop and refine ideas and beliefs and to explore different and new perceptions.

## 2. *Communicating*

Effective Communicators are able to create, communicate and convey ideas clearly and confidently, using the full range of symbolic systems. They will interact with visual and print communication practices of the world in which they live.

- Being numerate: Understands and has the confidence and disposition to use the mathematical concepts and skills required to meet the demands of life.
- Being information literate: Understands how to effectively access, interpret, transform, create, communicate, evaluate and manage information in ethical ways using a range of sources.
- Being arts literate: Understands the purposes and uses of a range of arts forms – visual arts, media, dance, music, drama and literature, and how to make and share meaning from and through them. Uses with confidence and skill the codes and conventions of the art form best suited to their expressive needs.

## 3. *Personal futures*

Self-directed and ethical people have a positive vision for themselves and their future, act with moral autonomy and contribute to constructive futures for themselves and others.

- Building and maintaining identity and relationships: Understands the ways in which heredity, culture, community and personal choice shape identity and relationships and is able to build and maintain resilient, productive relationships.
- Maintaining wellbeing: Understands the interdependence of the physical, mental, emotional, social and spiritual dimensions of wellbeing and knows how to make wise choices and contribute positively to the overall wellbeing of self and others.
- Being ethical: Understands that to be ethical requires caring about the consequences of actions of self and others and that the quality of ethical judgments is based upon reasoning and the application of ethical principles.
- Creating and pursuing goals: Understands how to create, set and review goals for life and how to work with others to achieve own and shared goals.

## 4. *Social responsibility*

Responsible citizens are prepared to participate actively in a democratic community, valuing diversity and acting for a just and equitable society.

- Building social capital: Understands the interdependence of individuals, groups and social organisations and participates positively in the building of ‘good and just’ communities.
- Valuing diversity: Understands the interdependence of our world, values its diversity and acts for a more inclusive society.
- Acting democratically: Understands and participates effectively in democratic decision making processes and civic life.
- Understanding the past and creating preferred futures: Understands that investigating the past and reflecting on the present are essential to understanding self and others and creating preferred futures.

### 5. *World futures*

World Contributors willing to consider the consequences of scientific and technological innovations, make thoughtful decisions about their application, and act to maintain, protect and enhance local and global environments.

- Investigating the natural and constructed world: Understands how to scientifically investigate the natural and constructed world, appreciating the tentative nature of knowledge and the value of creative, imaginative and speculative thinking.
- Understanding systems: Understands that the social, natural and constructed world is made up of a complex web of relationships or systems.
- Designing and evaluating technological solutions: Understands how to design, make and critically evaluate products and processes in response to human needs and challenges.
- Creating sustainable futures: Understands the environmental principles and ethical issues involved in creating and working towards sustainable futures.

### **New South Wales (K-6)**

In its exploration of generic skills, New South Wales undertook a 1999 audit of K-6 syllabus documents to identify where generic skills were used in the content areas of the curriculum. The syllabus documents considered were: Mathematics K-6 Outcomes and Indicators (1998); English K-6 Syllabus (1998); Human Society and Its Environment K-6 Syllabus (1998); Science and Technology K-6 Syllabus (1991); Personal Development, Health and Physical Education K-6 Syllabus (1999); and the Creative Arts K-6 Draft Syllabus (1998).

The ‘generic skills’ identified are broadly categorised as Research, Communication, Solving Problems, Using Technology, Critical Thinking, Expression, Task Management, Cooperation and Citizenship (see Table A4.2). These skills are evident in each key learning area but are not subject specific.

Table A4.2  
NSW Generic Skills

Skill Focus	Description
Research	Locate, select and evaluate information from a variety of sources
Communication	Present and communicate information according to purpose, situation and audience
Solving Problems	Apply a range of problem-solving strategies to achieve an accepted solution
Using Technology	Select and use the most appropriate technologies for a given task
Critical Thinking	Make personal judgements and informed choices
Expression	Respond emotionally and imaginatively through creative and expressive activities
Task Management	Use time and resources effectively
Cooperation	Work cooperatively with others
Citizenship	Develop an awareness of personal, local, national and global responsibilities

### Victoria (P-10)

Current work in Victoria to conceptualise generic skills and attributes (VCAA, 2005) in the compulsory years of schooling parallels work in other systems. The Victorian 'Essential Learning' document identifies four broad areas:

#### 1. *Communication skills*

Communication underpins all learning. Communication skills are fundamental to the capacity to transfer learning and are the most basic of any set of generic skills. Communication skills require the development of a broad range of literacy and numeracy skills, complemented by speaking and listening, visual and ICT skills, and non-verbal and physical forms of communication. Specific areas to be developed include:

- reading and responding to a wide range of texts. This includes developing an understanding and appreciation of different information forms and styles that allow the reader to interpret, synthesise, evaluate or respond creatively.
- writing for a wide range of purposes and audiences. This includes applying the processes of drafting, editing and producing a final product in an appropriate form for specific content areas across the curriculum.
- speaking and listening in a wide range of settings. This includes the speaking processes of composition, use of voice, gestures, conventions of genre to match the messages being communicated. It also includes active listening, for example, seeking clarification, asking for repetition, defining points not understood, note-taking to enable the listener to make sense of the incoming information.
- visual and graphic representation, including technical and creative skills in drawing, design and presentation.
- mathematical representation including the use of number, data and spatial representation.

- ICT, including the specific application skills in key packages such as word processing, databases, presentation graphics, web authoring, and active management of electronic information including file management and data protection. This also includes the application of information literacy skills including the accessing and sourcing of Internet material.
- non-verbal and physical forms of communication including gesture, performance, body awareness and cultural sensitivity related to interpreting non-verbal communication.

## 2. *Cognitive and meta-cognitive skills or thinking skills*

Students should develop a range of cognitive and meta-cognitive skills essential to ongoing learning across the curriculum and beyond formal schooling, such as:

- inquiring – identifying and asking questions; planning research; predicting outcomes and anticipating consequences; drawing and testing conclusions.
- processing information – finding relevant information; classifying and organising information; comparing and contrasting different information; identifying and analysing relationships.
- creative thinking – generating and developing ideas; hypothesising; applying information and taking risks; seeking and testing innovative alternatives.
- reasoning – providing reasons for arguments, opinions and actions; inferring from information; making deductions; making informed judgments and decisions; clarifying and using appropriate language to reason.
- problem solving – identifying and clarifying problems; planning, identifying and testing out options; checking the effectiveness of solutions and determining if problems have been solved.
- evaluation – developing and applying relevant evaluation criteria; judging the value and effectiveness of information, ideas and actions.

## 3. *Social and cultural skills, values and attributes*

Students should learn a range of skills to enable them to become active, responsible and productive members of the community, such as:

- social competencies – taking responsibility for one's own behaviour and actions to others; developing positive relationships with others; respecting oneself and others within and beyond the school; responding positively to challenges and opportunities.
- moral and spiritual attributes and values – distinguishing between right and wrong; making informed judgments and working for the common good; developing values; clarifying and questioning one's own beliefs.
- cultural understanding – recognising and appreciating one's own and different cultures and beliefs; understanding the influence of different cultures and beliefs on individuals and societies.
- civic understanding – understanding the values and norms which govern one's own society; acting with integrity and responsibility towards others; exercising tolerance and challenging discrimination;



exercising care and responsibility for the environment at a local and broader level.

- personal development –understanding physical, social, emotional and mental dimensions of health; developing skills and attributes to contribute to an ongoing active and healthy life style; understanding the impact of relationships on wellbeing.

#### 4. *Organisational and employability skills and attributes*

Students should learn key organisational and employment-related skills, which build on the previous generic skills listed, such as:

- working with others and in teams – planning cooperatively and sharing tasks; interacting effectively with others both on a one-to-one basis and in groups; compromising and reaching agreement to achieve objectives; contributing according to particular strengths and skills; learning from others who have better skills in one or more areas.
- developing independence and improving personal performance – using basic planning processes for one’s own work; setting goals and targets for one’s own learning; working towards objectives; clarifying priorities and making good use of resources and time; reviewing progress and achievements; seeking feedback on performance and strategies for improved performance.

### **Employability Skills**

There has been growing interest in recent years in the identification and development of ‘employability’ skills. A brief history of the evolution of employability skills has been developed by the (National Centre for Vocational Education Research, 2003). This history is summarised in Table A4.3.

Table A4.3

#### *Evolution of Employability Skills*

<b>Year</b>	<b>Development/s</b>
1985	A Committee chaired by Professor Peter Karmel looked into the quality of education in Australia. It highlighted the importance of an internationally competitive labour force and stressed that outcomes of education should contribute to Australia’s competitiveness. The Committee recommended that students in primary and secondary schools be prepared for both education and employment through the development of skills such as accessing information, communicating and working in groups.
1991	A review of young people’s post-compulsory education and training in Australia recognised the importance of young people developing key competencies. Due to changing technology and changing economic circumstances, it was argued that the training system must emphasise both the acquisition of specific technical skills for the job and flexibility. This required a strong grounding in generic and transferable skills.
1992	At Finn’s recommendation, the Mayer Committee developed a set of key competencies essential to preparing young people for employment. Seven competencies resulted from extensive consultation with the various education sectors and the business community.

Table A4.3  
(continued)

1999	The Australian Industry Group commissioned a report from the (Allen Consultancy Group, 1999) that drew attention to the importance of both 'hard' (notably information technology) skills and 'soft' skills (eg, problem-solving, team skills, willingness to be adaptable) which need to be developed prior to recruitment.
2002	The Australian Chamber of Commerce and Industry (ACCI) and the Business Council of Australia (BCA) undertook a study of employers' views on generic skills. They produced an expanded list of skills as the basis for employability. The report acknowledged that combinations of these skills lead to high job-related performance.
2003	The Australian National Training Authority (ANTA) took up the issue of employability skills development through the VET sector, including pilot testing various approaches to improving the identification of these skills in training packages. This was in response to consultations and research that indicated success in the teaching and learning of these skills depended on them being made more explicit.
2004	The Allen Consulting Group prepared a report for the Department of Education, Science and Training (DEST) on the 'Development of a strategy to support the universal recognition and recording of employability skills'. The intention was to develop a strategy relevant to schools, vocational education and training, higher education and the broader community, including workplaces.

## International developments

### United Kingdom

In the UK generic skills initially were called 'core' skills and later 'key' skills. Key skills are defined as those skills relevant to a person's learning, career and personal life, with a strong emphasis on their application to employability. Key skills comprise a list of skills similar to Australia's key competencies and are divided into a set of three 'basic' skills and three 'wider' skills. The three basic skills, which comprise a national Key Skills Qualification, include:

- communication;
- numeracy or the application of numbers; and
- use of information technology.

The three wider key skills are:

- working with others;
- improving own learning and performance; and
- problem-solving.

Each of the six key skills is defined at five levels (foundation, craft, technician/supervisor, higher technician/junior manager and professional/managerial). Progression through these levels is distinguished by the degree of

responsibility and the complexity and demand of tasks, problems and situations.

Employers have since added other skills and refer to the key skills as 'employability skills'. The Confederation of British Industry defines 'employability' as 'the possession by an individual of the qualities and competencies required to meet the changing needs of employers and customers and thereby help to realise his or her aspirations and potential at work'. (Confederation of British Industry, 1998).

The Confederation has identified employability skills as the six key skills, plus basic literacy and numeracy skills. It also included the following attitudes:

- adaptability;
- career management; and
- commitment to lifelong learning.

### **Canada**

In Canada, generic skills were conceptualised in the 1970s as a set of essential skills similar to the UK essential skills. In the 1990s, with involvement from employers, the Conference Board of Canada (a peak industry body) developed an alternative, more extensive scheme and introduced the term 'employability skills'. The recent Employability Skills 2000+ Scheme includes:

- fundamental skills (communicate, manage information, use numbers, think/solve problems);
- personal management skills (demonstrate positive attitudes and behaviours, be responsible, be adaptable, learn continuously, work safely);
- teamwork skills (work with others, participate in projects and tasks); and
- an orientation to values and attitudes with references to self-esteem, integrity, responsibility.

### **United States**

In the United States, the Secretary's Commission on Achieving Necessary Skills (SCANS) project was the major generic skills scheme of the early 1990s. The focus of the project was broader than workforce participation and included personal fulfilment and community involvement objectives. The review of the United States skills frameworks (O'Neil et al., 1997) found the following common elements:

- basic/foundation skills (literacy, numeracy, communication);
- higher order thinking skills (adapting to change, problem-solving, creativity, decision-making, learning how to learn);
- interpersonal and team skills (communication, co-operation, negotiation/conflict resolution, leadership, and dealing with diversity); and
- personal characteristics and attitudes (including politeness, perseverance, goal-setting, positive self-worth).

## DeSeCo

The DeSeCo (Definition and Selection of Competencies) exercise is an international initiative to identify and define major general capabilities. The exercise has identified three broad generic competencies listed in Table A4.4.

Table A4.4

### *DeSeCo Competencies*

Competency	Description
Acting autonomously and reflectively	defend and assert one's rights, interests, responsibilities, limits and needs form and conduct a life plan and personal projects
Using tools interactively	act within the big picture use knowledge and information interactively use knowledge and information interactively use technology interactively
Joining and functioning in socially heterogeneous groups	relate well to others cooperate manage and resolve conflict

Although these three competencies are interrelated, each has a specific focus. The focus of 'acting autonomously' is on relative autonomy and identity. 'Using tools interactively' concerns interaction with the world through physical and socio-cultural tools (including the traditional academic disciplines); and the category 'functioning in socially heterogeneous groups' focuses on the individual's interaction with others who are different (Group, 2002). Each of the three broad competencies is broken down further to provide a more extensive list of generic skills.

## Appendix 5. Use of tests for moderation and scaling

This appendix considers how tests can and are used to achieve comparability of student assessments across educational contexts.

One use of common tests is to ensure comparable school-based assessments. All Australian states and territories use assessments of student achievement provided by teachers. In most states and territories these school-based assessments are used together with students' performances on external examinations. Two systems—the ACT and Queensland—do not have examinations and rely entirely on teachers' assessments.

### Statistical moderation

Many states and territories statistically 'moderate' school-based assessments against students' examination results. Moderation is a process of ensuring that the standards that are applied to students in different schools are comparable and fair. It ensures that students are neither advantaged nor disadvantaged by differences in teachers' assessments that cannot be attributed to differences in performance in the subject. In statistical moderation, students' school-based assessments are brought into line with their examination results<sup>16</sup>. This process is performed within each subject within each school. In this process, the external subject examination provides the common 'test' against which teachers' assessments are statistically adjusted.

Victoria uses, in some cases, a mixture of subject-based examinations and students' performances on a common test (the General Achievement Test, GAT) to moderate school assessments. It uses the examination scores in all subjects as the basis for statistical moderation. However, it also uses the GAT and examination scores in subjects where in doing so a better match with schools' assessments throughout the state is achieved.

In the two systems that do not have external examinations, teachers' assessments are scaled against a common test. Queensland uses the Queensland Core Skills Test (QCS) as its common test while the Australian Capital Territory uses the ACT Scaling Test (AST).

### Consensus moderation

Statistical moderation is not the only moderation technique used to align standards across schools. Consensus moderation is used to align grades and marks across schools through a series of moderation meetings and, sometimes, school visits. In essence, consensus moderation involves teachers from each school meeting to examine work programs, assessment programs, samples of

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<sup>16</sup> Statistical moderation is the process of adjusting the school-based assessment distributions for a subject so that the mean and standard deviation of the moderated school-based assessments match the mean and standard deviation of the school's distribution on the external examination scores for the subject.

work and pre-specified performance standards to ensure that those standards are being interpreted and applied consistently across schools.

Statistical moderation and consensus moderation are thus two processes used in Australia to ensure that teachers' assessments are comparable from teacher to another and from one school to another.

## **Subject scaling**

Another issue that arises in the context of tertiary selection is that there are differences in the general abilities of students choosing different subjects. For example, it is generally the case that students choosing an advanced mathematics course are, on average, more able than students choosing legal studies. Australian states and territories attempt to adjust for such differences in the calculation of ENTER scores so that students are not advantaged or disadvantaged by the combination of subjects they have taken. The process of adjusting statistically for between-subject differences is generally known as 'scaling'.

Scaling places the distributions of subject scores onto a common scale by bringing them into alignment with the scores of the same students on some common measure of ability or achievement. In some systems, the 'common measure' is taken to be students' performances in their other subjects. An iterative process (sometimes called inter-subject scaling) is used to ensure that the distribution of students' results in a particular subject is aligned with the distribution of those students' results in their other subjects.

In the ACT and Queensland, the 'common measure' is taken to be the AST and QCS test respectively. The distribution of student results in each subject is aligned with the distribution of test scores for those students. Thus the AST and the QCS are used both to statistically moderate teachers' assessments across schools and to adjust for differences in the candidatures choosing particular subjects.

The three tests mentioned above, GAT, AST and QCS, are described in detail in Appendix 3. The following section summarises how the three tests currently are used.

## **The ACT Scaling Test (AST)**

The ACT Scaling Test (AST) is a test designed to measure a range of general skills considered to be relevant to success in university studies. All students in the ACT seeking admission to university must sit this test in order to gain a University Admission Index (UAI).

The ACT Colleges generate a school assessment for all students seeking access to university. These same students sit the AST and the scores on the test are used to statistically moderate the school-assessed score. This process ensures that all course scores can be meaningfully compared. These scaled course

scores are then aggregated to produce a single rank order of merit based. This aggregate is used to produce a tertiary entrance rank.

The AST score is not published on the certificate. However, the total score plus the scores on the various components of the test are made available to students at the end of Year 12 through the school.

## **The General Achievement Test (GAT)**

The Victorian GAT is a test of general knowledge and skills in written communication; mathematics, science and technology; and the humanities, arts and social sciences.

All students enrolled in one or more VCE Unit 3 and 4 subjects must sit the GAT. Although results do not contribute directly to a student's VCE results they are used to:

- statistically moderate school assessments before they are combined with the examination score for the subject for inclusion in the Tertiary Entrance Score (TES);
- derive examination scores in those subjects for which a student's performance on an examination is affected by accident, sickness or misadventure;
- review school assessments in school assessed tasks; and,
- check the accuracy of examination marking. If there is a significant difference between a student's examination score and the predicted score, inclusive of a component of the GAT, then the examination score is reassessed.

A total GAT score is calculated for each student by summing the scores on each of the domains and sub-tests. In addition, standardised scores are provided for the Mathematics, Science and Technology (MST) and Humanities, Arts and Social Sciences (HASS) domains, and Written Communication. These scores are standardised to have a mean of 30 and a standard deviation of 7.

Individual domain scores for MST and HASS are recorded and a Written Communication score is provided. Different composites of scores are calculated and used for the variety of purposes for which the GAT is used in the higher education admissions process.

## **The Queensland Core Skills Test (QCS)**

The QCS test is an achievement test that assesses 49 common curriculum elements of the Queensland Senior Curriculum and is available to all Year 12 students.

The scores from the QCS are used primarily for scaling purposes. Initially the QCS is used to scale school assessments in order to produce a single rank order of performance within each school. This scaled school-assessment score (called the Scaled Student Achievement Index, SAI) enables comparisons to be made of the achievements of students in one subject in the school with the

achievements of students in other subjects. The scaling involves transforming the distribution of subject results in a school to have the same average and spread as students' scores on the QCS Test.

The second stage of scaling uses the QCS results in a similar way to eliminate differences across schools. The resulting scores thus compare each student with each other student regardless of their combination of subjects and regardless of the school attended.

As part of the process, a student's individual QCS score is expressed as a grade from A (highest) to E. The grade is determined by a standard setting exercise that involves establishing numerical cut-scores on the test after analysis of student performance on the following five criteria: comprehend and collect; structure and sequence; analyse, assess and conclude; create and present; and apply techniques and procedures.

Grades awarded to candidates are based on the aggregate score on the total test.



## Appendix 6. Participants in national consultations

### **Australian Capital Territory, 31 August 2005**

Merredy Brown	ACT Council of Parents and Citizens Associations Inc
Prof Tim Brown	Dean of Science, Australian National University
Selwyn Cornish	ACT BSSS Chair; Australian National University
Dr Douglas Craig	School of Social Sciences, Australian National University
Craig Curry	Department of Education & Training
Rita Daniels	Catholic Education Office – Archdiocese of Canberra & Goulburn
Bob Edwards	Executive Officer, ACT Board of Senior Secondary Studies
Prof Denis Goodrum	Head of School, University of Canberra
Lisa Henderson	ACT Council of Parents and Citizens Associations Inc
Peter Kemmis	Council of P&C Associations
Sue Maslen	Canberra Institute of Technology
Julie McKinnen	Department of Education & Training
Phil Pettit	Catholic Education Services
Allan Shaw	Executive Officer, Association of Heads of Independent Schools of Australia
Helen Stauch	Department of Education & Training
Graham Willard	Association of Independent Schools of the ACT

### *DEST*

Jefferson Arendse	Policy Officer, New Apprenticeships Policy and Programmes Branch, National Training Directions Group
Liz Dowd	Director, Australian Technical Colleges Branch, Schools Resourcing Group
Helen Eastburn	Director, Enterprise and Career Development Branch, Indigenous and Transitions Group
Jennifer Forest	Vocational Enterprise and Learning, Enterprise and Career Development Branch, Indigenous and Transitions Group
Rebecca Frantz	Vocational Enterprise and Learning, Enterprise and Career Development Branch, Indigenous and Transitions Group
Chris James	New Apprenticeships Policy and Programmes Branch, National Training Directions Group
Elinder Moore	Vocational Enterprise and Learning, Enterprise and Career Development Branch, Indigenous and Transitions Group
Alison O'Shaughnessy	Project Officer, Quality Schooling Branch, Schools Group
Oon Ying Chin	Branch Manager, Economic Analysis, Growth and Evaluation Branch, Strategic Analysis and Evaluation Group

### **Northern Territory, 24 August 2005**

David Cannon	Principal, Essington School
Colleen Combe	Catholic Education Officer – Northern Territory (CEO Darwin)
Joanne Earl	Principal, Katherine High School
Debbie Efthymiades	General Manager Curriculum Services, Department of Employment Education and Training (DEET)
John Emslie	Business Adviser Chamber of Commerce NT
Trish Hansen	Assistant General Manager Curriculum Services, Department of Employment Education and Training (DEET)
Ken Hutton	President Northern Territory Council of Government School Organisations
Annette Jamieson	Principal, Centralian College
Kath Phelan	Executive Director, Association of Independent Schools of Northern Territory Inc (AISNT)
Doreen Rorrison	Charles Darwin University

### **New South Wales, 2-3 August 2005**

Ian Baker	Director Education Policy and Programs, Catholic Education Commission of New South Wales
Dr John Bennett	CEO, Office of the Board of Studies
Terry Blanchard	Association of Catholic School Principals in NSW and the ACT
Chris Bonnor	President, New South Wales Secondary Principals Council
Dr Brian Croke	Executive Director, Catholic Education Commission of New South Wales
Bob Fozzard	President, Federation of Parents and Citizens Associations of New South Wales
Martin Graham	A/General Manager, External Relations Policy Department of Education and Training (DET)
Antony Mayhofer	St Paul's Grammar
Duncan McInnes	Executive Officer, New South Wales Parents Council
Rob Randall	Director Curriculum, Department of Education and Training (DET)
Judith Russell	University of Sydney
Prof Gordon Stanley	President, Board of Studies
Andrew Stanton	Managing Director, Universities Admissions Centre (NSW & ACT) Pty Ltd (UAC)
Julie Thompson	Director Professional Development, Association of Independent Schools of New South Wales
Maureen Walsh	Australian Catholic University
Kathryn Wittingham	University of New South Wales

*(Catholic Education Office)*

Ian Baker	CE Commission
Mike Bizzna	CEO Parramatta
Terry Blanchard	ACSP
Vivian Brewer	CSSA
Ray Collins	CSO Maitland/Newcastle
John De Coursey	St Andrew College
Lesley Craig	CEO Parramatta
Brian Croke	Executive Director, Catholic Education Commission of NSW
Bill Driscoll	Ed Policy, CCSP Rep
Kathryn Fox	CSO Newcastle / Maitland
Mike Goffney	CEO Canberra and Goulburn
Carmel Kriz	CSO Broken Bay
Rosalie Nott	Catholic Education Commission
Tony McArthur	Catholic Education Commission
Seamus O'Grady	CEO Sydney
Patty O'Loughlin	CEO Wollongong
Peter Rafferty	CSO Broken Bay
Paul Thorton	CEO Lismore

*(University Academic Boards) (11 Aug)*

Roger Bronks	Southern Cross University (SCU)
John Carter	University of Sydney
Sita Chopra	University of Technology Sydney (UTS)
Anne Cusick	University of Western Sydney (UWS)
Chris Daly	University of New South Wales (UNSW)
Majella Franzmann	University of New England (UNE)
David Griffiths	
Bruce Kercher	Macquarie University
Eilis Magner	University of New England (UNE)
Des Petersen	University of Technology Sydney (UTS)
Erica Smith	Charles Sturt University (CSU)

**Queensland, 25-26 August 2005**

Lesley Englert	Assistant Director-General Curriculum, Department of Education and The Arts
Kim Bannikoff	Director, Queensland Studies Authority (QSA)
Paul Herschell	Manager Strategic Policy Unit, Queensland Studies Authority (QSA)
Pat Smith	Manager, Public Relations and Information ServicesQueensland Tertiary Admissions Centre Ltd (QTAC)
Suzanne Lunn	Association of Independent Schools of Queensland Inc (AISQ)
Mandy Anderson	Queensland Catholic Education Commission (QCEC)
Ray Marley	Queensland University of Technology (QUT)
Jocelyn Roberts	Queensland Secondary Principals Association Inc (QSPA)
Karyn McEwan	Vocational Education & Training Policy Commerce Queensland

Kevin Charlesworth	QLD Council of Parents and Citizens Association
Lyn Holman	Griffith University
Professor John Hay	Vice Chancellor, The University of Queensland
Greg Valentine	Regional Representative International Baccalaureate Organisation – Asia Pacific Region – Australasia (IBO)

### **South Australia, 19 September 2005**

Dr Siva. Alagumalai	Graduate School of Education, University of Adelaide
Pam Bartholomeus	SA Association of State School Organisations
Pennie Blazely	President, Federation of Catholic School Parent Communities
David Frith	Director – Workplace Policy & Business Services Development, Business SA
Heather Carey	Principal, Catholic Education Office
Megan Hall	student
Dr Barbara Kameniar	Flinders University of South Australia
Dr Janet Keightley	Chief Executive, Senior Secretary Assessment Board of South Australia (SSABSA)
Paul Kilvert	Executive Director, Service Delivery, Department of Education and Childrens Services SA (DECS)
Prof Fred McDougall	Acting Deputy Vice Chancellor and Provost, University of Adelaide
Helen O'Brien	Assistant Director, Catholic Education Officer
Prof Rigmor George	Pro Vice Chancellor: Access and Learning Support, University of South Australia (UNISA)
Brian Savins	Association of Independent Schools of South Australia (AISSA)
Prof Robin Storer	Flinders University of South Australia
Enid Templeton Tait	Independent Schools Parents Council of South Australia
Wendy Teasdale-Smith	Vice President Australian Secondary Principals Association (ASPA)
Helen Whelan	Association of Independent Schools of South Australia (AISSA)
Terry Woolley	Executive Director, Office of Primary, Middle and Senior Secondary Services Department of Education and Childrens Services SA (DECS)
Ms Jenice Zerna	President, SA Association of School Parents' Clubs

### ***(Secondary Principals)***

Miriam Alford	Educational Measurement Project Officer, DECS
Thomas Burns	Australian Science and Mathematics School
Susan Cameron	Principal, The Heights Pre School -12
Nita Combeer	Salisbury High School
Meredith Edwards	Principal, Woodville High School
Wendy House	SACLE consultant
Adrian Flynn	Salisbury High School
Mark Leahy	Principal, Marryatville High School
Peter Mader	Principal, Salisbury East High School
Ray Marion	Principal, Oakbank Area School
Helen Paphitis	Principal, Salisbury High School
Jan Paterson	Principal, Windsor Gardens Vocational College

Judy Sara	Australian Science and Mathematics School
Rob Shepherd	Woodville High School
Wendy Teasdale-Smith	Principal, Aberfoyle Park High School
Lia Tedesco	Principal, School of Languages
Nanette Van Ruiten	Deputy Principal, Parafield Gardens High School
Mike Williss	School of Languages

### **Tasmania, 5 September 2005**

Reg Allen	CEO Tasmanian Qualifications Authority (TQA)
Jennifer Branch	State School Parents and Friends Inc
David Billing	President, Tasmanian Principals Association
Allan Clark	Catholic Education Office
Tony Crehan	Executive Director Association of Independent Schools of Tasmania (AIST)
Tim Doe	Chair TQA
Kevin Fagan	Acting Deputy Secretary Department of Education (TAS DOE)
Jodie Stevenson	Tasmanian Chamber of Commerce and Industry

### **Victoria, 4 August 2005**

Julie Atkinson	Assistant Principal, Pascoe Vale Girls School
Prof Gerald Burke	Chair Victorian Qualifications Authority (VQA)
Coral Campbell	Faculty of Education, Deakin University
Merran Evans	Monash University
John Firth	Victorian Curriculum and Assessment Authority
Dr Judy Forsyth	Executive Officer, Australian Qualifications Framework Advisory Board (AQFAB)
Dr Dennis Gunning	Director Victorian Qualifications Authority (VQA)
Ass Prof Barry Hughes	Chair Selection Procedures Committee University of Melbourne
Aine Maher	
Roy Martin	Australian Education Union (AEU)
Bernie Neville	La Trobe University
Lynn Rolley	Federal Secretary, Independent Education Union of Australia (IEUA)
John Wade	Director, Victorian Tertiary Admissions Centre (VTAC)

### **Western Australia, 8-9 September 2005**

Sheena Barber	Coordinator , Learning & Teaching 7-12 Team, Catholic Education Commission of Western Australia (CECWA)
John Barich	Parents & Friends Federation of Western Australia
Jeanette Dalla-Costa	Curriculum Council
Valerie Flashman	Policy & Research Officer, Western Australian Council of State School Organisations Inc (WCASSO)
Valerie Gould	Association of Independent Schools of Western Australia Inc (AISWA)
Steve Hoath	Executive Officer, Tertiary Institutions Service Centre Inc (TISC)
Audrey Jackson	Executive Director, Association of Independent Schools of Western Australia Inc (AISWA)

Lois Joll	Director Post Compulsory Academic Standards and Support, Department of Education and Training WA (DET)
Helen Lydon	Curriculum Council
Ray Maher	President, Western Australian Secondary School Executives' Association (WASSEA)
Prof Bruce Shortland-Jones	Director LSN, Curtin University of Technology
Tim McDonald	Edith Cowan University (ECU) University
<i>(Catholic Education Office)</i>	
Ron Dullard	Director, Catholic Education Office
Michael Ciccarelli	Assistant Director (Curriculum Support)
Sheena Barber	Coordinator , Learning & Teaching 7-12 Team, Catholic Education Commission of Western Australia (CECWA)

## Participants in Other Meetings

### Australian Certificate of Education National Seminar, 22 November 2005

Audrey Jackson	Association of Independent Schools, WA
David Mulford	Association of the Heads of Independent Schools of Australia
Geoff Ryan	Association of the Heads of Independent Schools of Australia
Allan Shaw	Association of the Heads of Independent Schools of Australia
Terry Aulich	Aulich & Co
Mary Nicolson	Australian Chamber of Commerce and Industry
Jenny Branch	Australian Council of State School Organisations
Reg Allen	Australasian Curriculum Assessment Certification Authorities
Kim Bannikoff	Australasian Curriculum Assessment Certification Authorities
Mark Brown	Australasian Curriculum Assessment Certification Authorities
Bob Edwards	Australasian Curriculum Assessment Certification Authorities
Debbie Efthymiades	Australasian Curriculum Assessment Certification Authorities
John Firth	Australasian Curriculum Assessment Certification Authorities
Dennis Gunning	Australasian Curriculum Assessment Certification Authorities
Jan Keightley	Australasian Curriculum Assessment Certification Authorities
Gordon Stanley	Australasian Curriculum Assessment Certification Authorities
Peter Taylor	Australian Mathematical Sciences Institute
Tim Brown	Australian National University
Terry Blanchard	Association of Principals of Catholic Secondary Schools in Australia

Mary Ciccarelli	Association of Principals of Catholic Secondary Schools in Australia
Catherine Rey	Association of Principals of Catholic Secondary Schools in Australia
Malcolm Pound	Australian Parents Council, NSW
Leonie Trimper	Australian Primary Principals Association
Roger Pryor	Australian Primary Principals Association, VIC
John Ewington	Australian Principals Association, TAS
Jim McAlipine	Australian Principals Association, NSW
Wendy Teasdale-Smith	Australian Principals Association, SA
Paul Carnemolla	Australian Science Teachers Association
John Hodgkinson	Australian Secondary Principals Association, QLD
Ian Ferguson,	Australian Secondary Principals Association, QLD
John Bennett	Board of Studies, NSW
Maria Tarrant	Business Council of Australia
Ian Baker	Catholic Education Commission of NSW
Susan Pascoe	Catholic Education Commission of Victoria
Andrea Cornwell	Department of Education and the Arts, QLD
Lesley Englert	Department of Education and the Arts, QLD
Robwyn Miller	Department of Education and the Arts, NSW
Michele Bruniges	Department of Education and Training, ACT
Bernadette McDonald	Department of Education and Training, ACT
Trish Mercer	DEST
Giancarlo Savaris	DEST
Noel Simpson	DEST
Lois Joll	Department of Education and Training, WA
Kevin Donnelly	Education Strategies
Mark Butler	Gosford High School, NSW
Tony Mackay	Incorporated Association of Registered Teachers of Victoria
Linda Collings	Independent Schools Council of Australia
Greg Valentine	International Baccalaureate Organisation
George Cooney	Macquarie University
Chris Browne	Monash University
Allan Hird	National Institute for Quality Teaching and School Leadership
Wendy Engliss	Senior Secondary Assessment Board of South Australia
John Vallance	Sydney Grammar School, NSW
Bruce Wilson	The Education Business
Andrew Stanton	Universities Admissions Centre, NSW
John Pitman	University of Queensland

### **New South Wales, Departmental Seminar, 23 November 2005**

Andrew Cappie-Wood	Department of Education and Training
Trevor Fletcher	Department of Education and Training
Leslie Loble	Department of Education and Training
Martin Bowles	Department of Education and Training
Marie Persson	Department of Education and Training
Chris Ryan	Department of Education and Training
Gillian Shadwick	Department of Education and Training
Max Smith	Department of Education and Training
Dave Wasson	Department of Education and Training
Martin Graham	Department of Education and Training
Christine Ewan	Department of Education and Training

Mary O’Sullivan	Department of Education and Training
Robyn McKerihan	Department of Education and Training
Di Wasson	Department of Education and Training
Gordon Stanley	Board of Studies
John Bennett	Board of Studies
Andrew Rolfe	Minister’s Office
Brian Cheney	Treasury
Tom Alegounarias	NSW Institute of Teachers

### **Unsolicited written submissions**

Senior Secondary Assessment Board of South Australia (SSABSA)  
 The University of Western Australia, Office of the Vice-Chancellor  
 Murdoch University, Western Australia, Prospective Students’ and Admissions Centre  
 Marryatville Student Representative Council, South Australia  
 Dr Reg Allen, CEO, Tasmanian Qualifications Authority  
 Rear Admiral (retired) W. J. Rourke AO, ACT  
 Greg Valentine, Regional Representative, The International Baccalaureate  
 Organization, Asia Pacific Australasia.



## Appendix 7. Project steering committee

Mr Steve Balzary	Director, Australian Chamber of Commerce and Industry
Prof Chris Browne	President of the Academic Board, Monash University
Dr Michele Bruniges	Chief Executive, ACT Department of Education
Ms Judith Bundy	President, Australian Council of State School Organisations
Bill Burmester	Deputy Secretary, Department of Education, Science and Training
Mr Mark Butler	Head Teacher of Science, Gosford High School
Mr Ian Dalton	Executive Director
Dr Kevin Donnelly	Executive Director, Education Strategies
Mr Bob Edwards	Chief Executive Officer, ACT Board of Studies
Ms Audrey Jackson	Executive Director, Association of Independent Schools of Western Australia
Ms Susan Pascoe	Executive Director, Victorian Catholic Education Office
Prof Deryck Schreuder	Vice-Chancellor and President, The University of Western Australia
Ms Maria Tarrant	Director Policy, Business Council of Australia
Ms Wendy Teasdale-Smith	Vice President, Australian Secondary Principals Association
Mr John Vallance	Headmaster, Sydney Grammar School
Mr Bruce Wilson	Director, The Education Business

## Appendix 8. Existing state and territory certificates

This appendix reviews and analyses similarities in, and differences between, Australian state and territory senior secondary curriculum, assessment and certification arrangements. The appendix includes tables detailing the arrangements in each state and territory.

### Senior secondary certificate of education

The term ‘senior secondary certificate of education’ is defined under the Australian Qualifications Framework (AQF) (Australian Qualifications Framework, c2000). The AQF is a system of national qualifications in schools, institutes of technical and further education and universities, including private providers. National qualifications range from the senior secondary certificate of education to the doctoral degree. AQF guidelines for the Senior Secondary Certificate of Education are provided in Appendix 1.

#### Underpinning principles

In 1999 the state and territory agencies responsible for senior secondary certificates (ACACA) agreed on a broad set of principles for high-quality certificates and certification. These principles (and the associated guidelines) were developed to:

- help expedite the recurrent explorations of the issues confronting each state or territory on many occasions;
- present the Australian position on how certificates can have long-term and widespread currency;
- inform policy development at federal and state level;
- be reference points for future development;
- ensure that Australian certificates are accepted as being accurate and meaningful records of worthwhile achievements;
- respond to the globalisation of the world economy (which presents an increasing need for formal accreditation and certification of standards in a way that assures the long-term and widely accepted value of the certificates involved);
- respond to the increasing diversification of the senior curriculum (which is accompanied by rapid growth in the range and amount of information on certificates of senior secondary education);
- improve community understanding of the importance of senior certification procedures and practices; and
- provide the basis of the development of credible certification for students completing senior studies through a wide range of pathways, including combining part-time study and work.

According to the ACACA principles, a high-quality certificate of senior secondary education:

- is issued by a legally constituted authority sufficiently separate from government, school authorities and community groups to arbitrate the many competing conflicting interests in senior certification;

- is backed by levels of quality control/assurance matched to the importance of students and users of the results recorded on the certificates and made clear to the users of the certificate;
- indicates clearly what a result certifies;
- is issued as a formal documentary record with copies available indefinitely; and
- is widely recognised interstate and overseas.

And also, according to the ACACA principles, high-quality certification involves:

- high quality in curriculum documents, assessment procedures and performance standards;
- open and transparent processes;
- monitoring the currency, relevance and value of results recorded on certificates and the procedures and practices used in their production;
- the issuing authority taking responsibility for the substantive truth of the statement implied by the appearance of a result on its certificate;
- developing procedures for students to transfer from interstate or overseas before completion of senior studies without unfair penalty;
- fostering opportunities for students to move easily across pathways during and after senior studies.

(Australasian Curriculum Assessment and Certification Authorities, 1999)

### **Similarities and differences**

There are key differences in arrangements for senior curricula, assessment and certification across Australia's eight jurisdictions. There are also similarities. The major similarities have historical origins in the culture and values of Australia. The notion of a federation of states in which states have constitutional responsibility for school education is fundamental to understanding the existence of different systems across the country.

The policies and procedures of the states and territories are underpinned by a set of common intentions that can be described as:

- Excellence in procedures and products
- Diversity in curriculum offerings
- Flexibility in arrangements
- Equity in access to participation, engagement and achievement
- Validity and reliability in assessment.

The most noticeable differences across jurisdictions are in:

#### **Curriculum**

- models of curriculum/syllabus development/frameworks
- the names given to subjects

#### **Assessment and reporting arrangements**

- the balance of arrangements and modes of assessment
- the underpinnings of assessment and standards

#### **Certification**

- eligibility requirements for the award of a senior certificate
- terminology used to report student results.

There are differences in the rationales given for certain procedures and in the use of terms. Differences in terminology, in particular, complicate the task of adequately and accurately describing senior secondary arrangements in different jurisdictions.

Allen (1997) classifies current differences in senior curricula, assessment and certification as: (1) accidental—somebody made an arbitrary decision and it stuck; (2) historical—grounded in the history of the states and their education systems, their changes and continuities; or (3) conceptual—a function of different notions of a subject and its pedagogy. A possible extra category might be (4)—political climate or dominant philosophy/ideology at the time.

Two apparent conceptual differences between the states are in their models of curriculum development and in the way in which they balance their modes of assessment.

## Curriculum

### *Academic/general learning*

In most states/territories, areas of study are ‘packaged’ as subjects. In South Australia, there are ‘studies’, which encompass subjects at different levels. In the ACT, areas of study are ‘packaged’ as courses (and there are literally thousands of subjects produced under the course banners).

Apart from English and Mathematics, there are eight subjects that have the same name and are offered in all jurisdictions. They are Chemistry, Economics, Physics, Biology, Accounting, Geography, Dance, and Drama.

A subject called Legal Studies is offered in five jurisdictions (including South Australia with three options), Political Studies in two, Australian and International Politics in one. Politics and Law is in the list of subjects for the new WACE. A course named Legal Studies and Political Studies is offered in the ACT, and schools provide subjects under this banner for accreditation before implementation.

In the field of History/Classics there is a family of names across six states: Ancient History, Modern History, History Extension, Ancient Civilisations, Modern World History, Australia in Asia & the Pacific, Australian Studies, Renaissance Italy, Australian History, Revolutions, History Ancient & Modern, History; and also Classical Studies and Latin.

Similar names also are used in the fields of Agriculture and Horticulture: Agriculture (2), Agricultural Science (1), Agricultural & Horticultural Science (2); and in business: Business Studies, Business Management, Business Organisation & Management, and Business Management & Enterprise.

A range of language studies also is offered across the seven jurisdictions (Table A8.1).

Table A8.1  
*Language Studies Offered in the States and Territories*

State/T	Language Offering
ACT	Course framework: Languages other than English
NSW	59 courses in 34 languages
QLD	13 foreign languages; 3 foreign languages (extension)
SA	10 languages state-assessed (including 7 at two levels, one at three levels, and 8 options for Australian languages); 31 languages nationally assessed; 3 languages interstate assessed
TAS	7 foreign languages + CCAFL and languages borrowed from other agencies
VIC	48 foreign languages
WA	LOTE first language (4); LOTE second language (6)

(Note: The specific terminology for describing language offerings in Table A8.1 was provided by the ACACA agencies.)

The word design appears in a variety of subjects, including art, craft, visual arts, textiles, visual communication, software, graphics, audio, technology, materials, and housing. Design, broadly construed, refers to the human endeavour of shaping objects to purposes—clothes, floors, bridges, symphonies, air buses, artificial lighting, the World Wide Web, and even language itself. Perkins (1986) discusses how the concept of design opens a doorway into a deeper exploration of any topic: esoteric or everyday, academic or vocational, scientific or artistic. On one hand, the abundance of ‘design’ subjects may be an appropriate recognition of design’s place in the curriculum. On the other hand, the uneven approach to design subjects across Australia may be an inadequate response to how pervasive and important design has become in today’s world.

However, subjects with the same name (eg, English) may be the same or may be different, and subjects with different names may be the same. To determine similarities and differences, one would need to study curriculum frameworks or syllabus documents and the assessments that accompany the courses.

In addition, there are courses with different emphases (as opposed to different names for belonging to different categories of subject) to meet the varying needs and interests of students. There are courses that emphasise the kinds of knowledge and thinking required as a foundation for lifelong learning and, but not inevitably, to support access to university and promote the value of higher-order problem solving and dealing with lengthy texts. There are courses for developing immediate workplace competencies and attitudes. And there are courses for remediation.

There are also subjects that are taken as alternatives to the major subjects, often by students at risk. Although these subjects may have relatively high enrolments, and student may do well in them, students who do well in these subjects tend to perform less well in other senior schools subjects.

In some cases, there is a common standards framework for general and advanced level courses; in other cases there is a separate syllabus (or curriculum document) for each of the courses with different emphases within the same field of knowledge. For example, Table A8.2 provides a list of all mathematics courses/subjects offered across the country that can count towards the TER (and there are hundreds of others in the ‘maths-for-living’ genre).

Table A8.2

*Mathematics Courses that Count Towards TER*

<b>Mathematics Course</b>
A
Applications/Applied
B
C
Chance & Data
Extension 1
Extension 2
Further
General
Mathematics
Methods
Number & Change
Space & Movement
Specialist/Specialised

The number of subjects on offer means that, commonly, there are few students taking any given combination of subjects. The combination of English, two Mathematics subjects, Chemistry and Physics with or without a sixth subject is considered by some to be the stereotype of the competitive academic curriculum. This combination was taken by just 5.5% of the senior population in Queensland in 1998.

In New South Wales, the top ten subjects by size of candidature in the 2004 HSC examinations were, in decreasing order of magnitude: English; Mathematics; Business Studies; Biology; Studies of Religion; Personal Development, Health & Physical Education; Chemistry; Physics; and Ancient History.

*Vocational learning considerations*

During the 1990s, many secondary schools began exploring alternative pathways for senior students wanting to engage with more vocationally oriented courses. Federal funds were injected into the VET in Schools Program in 1997, leading to the integration of VET in Schools courses into senior secondary certificates (eg, VCE VET in Victoria, recognition of VET for credit within the SACE, and VET frameworks accepted for HSC study in NSW and accredited for the UAI).

There were, however, some critics of this approach to the incorporation of VET into senior school studies:

But for many students for whom the schools had originally developed alternative senior school programs, and for whom VET courses were seen as most appropriate, moving the VET units into the academic certificates was a move in the wrong direction. What was required to satisfy the study and work aspirations of these students was the local flexibility and responsiveness of the alternative experimental programs and clear pathways to vocational education, training and work that these provided, together with external recognition of student achievement in the form of a qualification. This was unlikely to be achieved through the integration of VET courses into the qualification structures of the Senior School Certificates around the country; an integration that moulded these vocationally oriented courses of study into a better fit with the dominant and exclusionary academic forms of learning of these certificates.

(Henry et al., 2003)

Figgis (2005) delivers the diagnosis that there is a ‘continuing and debilitating uncertainty about the distinction between vocational and academic study’. She provides three examples of different approaches to distinguishing vocational and academic study.

1. Victoria began by saying vocational and academic courses can be fitted into one certification regime, the VCE, but that was plagued with concerns about the so-called intellectual quality of vocational courses and, in the end, a second qualification, the VCAL, was introduced (although some VET courses still come within the ambit of the VCE).
2. Western Australia is attempting to merge both types of study so in each of the 50 proposed courses of study there will be VET options as well as academic ones. This attempt to completely rewrite the senior secondary school curriculum has taken years, and the process is not yet over with earlier resolutions being renegotiated and an unacceptable level of confusion persisting.
3. Queensland has basically said, there is no problem: so long as a course of study meets the criteria of quality, it doesn’t matter whether it is an academic course or a vocational one, it counts as a valued contribution to secondary school certification. This simple solution has meant that Queensland could move quickly towards implementing its suite of ETRF [Education and Training Reforms for the Future].

(Figgis, 2005)

#### *New arrangements*

In 2004, the Queensland Minister for Education and the Arts released two consultation papers, the first stage of the consultation having confirmed that there should be a new school qualification—the Queensland Certificate of Education (QCE)—to describe a range of learning in education, training and community settings. The first QCEs will be issued in 2008.

Following Pitman’s (2002) report, the QCE is to incorporate the notion of a ‘learning account’ to be opened for each young person during the senior phase of schooling. A person’s Learning Account is to record all learning ‘banked’

into it, and is to remain open until s/he achieves the QCE, which depends on banking 20 credits and meeting requirements in literacy and numeracy ('credit' is an assessable quantity of worthwhile learning).

The QCE was conceived as a qualification that can build on the strengths of learning achievements gained in schools, with VET providers, through higher education and in other settings.

(Queensland Studies Authority, 2005)

Students can include in the QCE external courses such as the IB Diploma program and courses offered by other jurisdictions (eg, VCE Psychology). The QCE expects young people to achieve specified standards of learning (competent for VET; at least a Sound Achievement or 4 on a 7-point scale in other courses; a Pass in AMEB-type examinations).

The Tasmanian Qualifications Authority is in the process of consulting with schools, students, parents, employers and other stakeholders about the minimum requirements for a proposed senior secondary completion/graduation certificate to be a requirement for students starting Year 11 in 2007.

Also on the drawing board is a new WACE, with the first ten courses of study to be introduced into Year 11 in 2006 and all courses of study to be introduced into Years 11 and 12 by 2009. The new WACE is described in the tables at the end of this appendix.

A recent review of the SACE aims to ensure that South Australia has a senior secondary school certificate that is internationally recognised, relevant and contemporary. A discussion paper was released in 2004 and a five-part survey was circulated to students. The discussion paper posed the following questions.

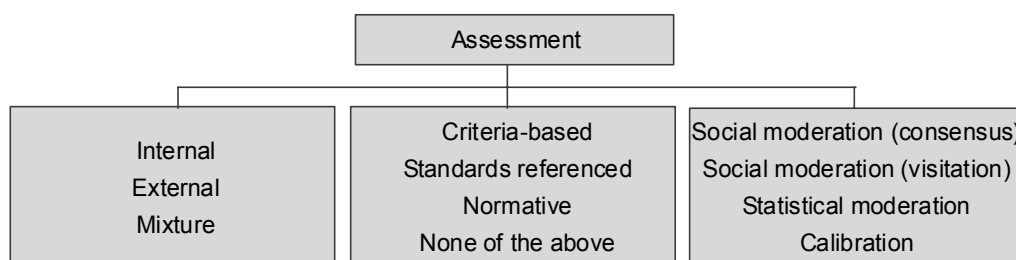
- How do we address the different needs and interests of the diverse range of students?
- What should be learned in senior secondary education and how should learning be organised?
- Is flexibility in the curriculum an important aim?
- What are the implications of university selection
- What do we mean by 'senior secondary' education?
- How should learning in the senior secondary years be assessed?
- What is the significance of a senior secondary certificate and what should it certify?

(Government of South Australia, 2004)

## **Assessment and reporting arrangements**

Figure A8.2 shows, from left to right, the three areas in which assessment arrangements differ across the country in terms of the nature of the assessment regime; the assessment/reporting model; and the method of assessment validation.





*Figure A8.2 Assessment alternatives*

### **Assessment regime**

In their arrangements for identifying, gathering and interpreting information about student achievement, the states/territories place different emphases on external and internal assessments.

By external assessment we mean the subject-specific examinations set by a body external to the school, as exemplified by the HSC. Such examinations are devised to assess the attainment and skill of students in a particular subject, whether by objective-type or by conventional written, oral or practical questions. All the questions refer to a syllabus that has been defined by a group of educators (teachers and/or examiners).

By internal assessment we mean school-based assessment—devised, constructed and implemented by schools. Internal assessment requires training and support. Teachers have to be trained to become consistent judges and there has to be a quality assurance process in place to guarantee comparability of results<sup>17</sup>.

All jurisdictions recognise value in including school-based assessments of students' subject learning. Assessment is recognised as an integral part of good pedagogy and current arrangements draw on teachers' specialist expertise and professional judgment. Assessment instruments include examinations, written assignments, projects, practical work, oral presentation, aural, tests, fieldwork, portfolio, and viva voce.

The situations that are constructed for the purpose of collecting evidence of student achievement might or might not be supervised, might be collected at a point-in-time or continuously, might or might not have to occur within certain prescribed dates, might be paper-based, might be computer-based, might or might not allow open books for reference, might produce written text or the manipulation of symbolic data or a performance or an artefact or some other practical activity. Sometimes this variation is a function of the nature of the subject; sometimes it is a function of the nature of the assessment regime. For written assessments, the format of the assessment task might be multiple-choice, constructed response or extended writing. The wide range of

<sup>17</sup> A side-effect of such processes is that teachers have professional conversations about curriculum, assessment, pedagogy and standards. Moderation strategies deliver high-level professional development for teachers, not only in assessment but also in discipline-specific knowledge.

assessment methods used is a response to the diversity of subjects now on offer, many of which do not lend themselves to point-in-time pen-and-paper tests<sup>18</sup>.

There are no external examinations in the ACT. Queensland has operated a system of externally moderated school-based assessment since 1972. Other jurisdictions have a combination of both, and there have been changes in the relative proportions of external and internal assessment over time. The current arrangements in NSW, for example, are 50% external and 50% internal. South Australia has 100% internal for Stage 1 subjects (usually Year 11) and 50% internal for Stage 2 (usually Year 12).

Good quality examinations are effective tests of knowledge, understanding and critical capacity. In-depth questions drawing on what has been learnt from across the course (synoptic assessment) help learners to develop the ability to select from and analyse a wide range of material to develop arguments and conclusions. (Tomlinson, 2004)

The interplay of some of Tomlinson's (2004) examination characteristics can be seen in Question 27 on the 2004 HSC Physics Examination. This question required students to demonstrate deep knowledge and understanding in Physics, and to discern the aspects of physics required to solve this problem.

**Question 27 (4 marks)**

A sports magazine commenting on the athletic ability of Michael Jordan, the famous basketball player said:

'Being an athlete takes more brains than brawn. It takes time and effort. It takes endurance and commitment. It takes an athlete who can stay in the air for 2.5 seconds while shooting a goal; an athlete who knows which laws of physics keep him there.'

Assess the information presented in this magazine, using appropriate calculations to support your argument.

*Figure A8.3 Question 27, HSC Physics 2004*

As in all well designed assessment tasks, whether in external examination papers or in teacher-devised assessments, what is assessed in this task reflects the syllabus outcome statements (what is taught). The marking guidelines for the question are reproduced below.

<sup>18</sup> In recent years, 'authentic' assessment also has become *de rigueur*. Authentic assessment involves students in using relevant and useful knowledge, thinking and practical skills. This means the assessment task is 'realistic', that students experience the task as it could be carried out in a non-school environment; that the range of response modes is broad; and that the skills developed in other subject areas are enhanced. This change in emphasis can also be linked to a shift towards assessment tasks that emulate the kind of process-based higher-order tasks thought to represent good practice.

Table A8.2  
*Marking Guidelines (Question 27)*

Criteria	Marks
Correctly determines the take-off speed and recognises that this is impossible OR correctly determines that the height to which the athlete jumps is impossible AND hence the information is not accurate	4
Correctly determines the take-off speed and recognises that this is impossible OR correctly determines that the height to which the athlete jumps is impossible BUT does NOT make an assessment of the article	3
...	2
...	1

### Assessment/reporting model

In describing their processes for judging the quality of student work at the task/test/examination level and for grading student performance at the certification level, the states/territories use one or more of the following terms: criteria-based, standards-based, standards referenced, and criterion based all of which reflect a shift from norm referenced reporting that is, from reporting student performance relative to that of other students<sup>19</sup>.

For example, after the McGaw Report of 1996, NSW moved from norm-referenced to standards-referenced reporting; that is to reporting student performance against pre-determined and described standards. After the 1978 Review of School-Based Assessment (ROSBA) in Queensland, norm-based reporting was replaced with criteria-based reporting; that is, from assigning grades according to a normal distribution to assigning grades based on demonstration of specified criteria.

There also has been an attempt in a number of systems to develop more explicit statements of standards of student achievement. However, the states/territories do not have a common way of referring to standards and they are not equivalent across states. For example, in NSW, the HSC provides detailed information about students' levels of achievement in relation to described standards of achievement. In Queensland, standards descriptors for each exit level of achievement are published in the corresponding syllabus document.

In all cases, a student's reported level of achievement reflects not only the student's ability and effort but also the prevailing policies on pedagogy and assessment. These policies, in turn, are derived from the curriculum philosophy

<sup>19</sup> Sitting under the various models are procedures related to decision making in practices such as marking individual student scripts and in establishing cut-scores.

in the relevant state. This philosophy is influenced by competing notions of rigour, coherence, participation, balance, access, and equity.

The Australian Vocational Training System uses a competency-based approach. The ANTA glossary of VET terms describes competency-based assessment (or CBA) as ‘the gathering and judging of evidence in order to decide whether a person has achieved a standard of competence’. In a competency-based assessment assessors work with the candidate to collect a range of evidence of work performance using the appropriate nationally endorsed industry competency standards. Performance becomes an important source of evidence and assessors consider both direct and indirect forms of evidence in planning and designing assessments. Decisions are that candidates are either ‘competent’ or ‘not yet competent’ and opportunities are provided for further training and re-assessment. ‘Graded assessment’ practices in a competency-based system are determined at a state/territory/RTO level.

### **Assessment Validation**

Comparability of student results depends on standards being applied consistently across sites (schools, districts) and across judges (teacher-assessors) so that student performances of equivalent standard are recognised as such (eg, assigned the same grade). There are at least five approaches in the educational measurement literature (Linn, 1993) to making the results of one assessment comparable to those of another. The approach used in Australia to validate teachers’ judgments of student work is known as ‘social moderation’.

In social moderation—sometimes called consensus moderation, auditing or verification—judgments of teachers are ratified by others within the ‘guild of professionals’ (other teachers and moderators). Moderation can occur through teacher meetings (in the ACT all teachers are able to attend moderation meetings), panel meetings (as in Queensland) and visitations from a central office (as in South Australia, which also uses peer review). All versions of social moderation require a consensus on standards and on the performances required to meet those standards.

Throughout Australia, students entering university directly from school are selected on the basis of an aggregate of their senior secondary results. Different methods are used to construct rank orders, but the underpinning principles are similar.

Most systems use a statistical process in an attempt to ensure comparability and fairness. Many systems use ‘statistical moderation’ to remove the influence of teachers who may give unexpectedly high (or low) school-based assessments in a subject and to bring students’ school assessments in a subject into line with their examination results. The technique of using external examination marks as a yardstick against which the achievement of each subject-group can be compared is one technique; another is to administer an anchor test to all students. Whether the common measure is the external examination or an anchor test, it is the teacher(s) of the subject in each school who determine the rank order of students within that particular group. A different statistical process, sometimes referred to as inter-subject scaling, is used to make an

adjustment for the fact that subjects are chosen by candidates of different average ability.

## **Certification**

### **Statements of Results**

There is considerable variation in what is printed on the eight senior certificates. Most jurisdictions issue a certificate that gives the title of the qualification, name of student (but not school attended), year of issue, and name of the issuing authority (together with official signatory).

All jurisdictions provide a statement of results, either on a companion document (usually called a ‘Record of Achievement’ or ‘Statement of Results’) or, as is the case in Tasmania, Queensland and the ACT, by recording results directly on the certificate.

Some systems report student achievement in relation to standards or criteria. Some have been given the authority to issue AQF VET certificates. Vocational education is competency-based. For some jurisdictions, the student’s tertiary entrance rank (which has various names across the country) appears on yet another document (such as a ‘Tertiary Entrance Statement’).

Senior certificates also capture in print various jurisdiction-specific procedures. For example, Queensland has recently introduced a Certificate of Post-Compulsory School Education, which is awarded to students with an impairment or difficulties in learning that are not primarily due to socioeconomic, cultural and/or linguistic factors. The South Australian Certificate of Education (Modified) serves a similar purpose.

### *Level of Achievement*

There is considerable variation in the way in which levels of achievement are reported on the eight senior certificates.

Levels of achievement are denoted in various ways, including the use of A to E grades; performance bands (Band 1 to Band 6) accompanied by a description of what a typical student knows and can do in each band; Very High Achievement (VHA) to Very Limited Achievement (VLA) describing categories of student work that match pre-set standards; marks out of 50; and marks out of 100. For the new West Australian Certificate of Education it is planned to report results as levels. As the Executive Officer of the ACT Board of Senior Secondary Studies notes:

We need a better understanding of the reporting of student achievements—whether this is through grades, achievement bands or descriptive reporting; whether this applies to units of study and/or to exit level achievements; and whether the same scale of achievement is used for the full cohort or differentiated for different classifications of students... [and] we need to clarify what each jurisdiction means when it refers to standards of achievement... All jurisdictions have a standards approach to assessment and reporting, but there are subtle differences, both in philosophy and terminology.

Differences in terminology are illustrated in the following table which shows the terms used in seven jurisdictions for the highest standard of student performance in a subject or course of study.

Table A8.3  
*Highest Grade Awarded*

<b>State/Territory</b>	<b>Highest grade awarded</b>
ACT	A
New South Wales	Band 6
Queensland	VHA
South Australia	Outstanding Achievement
Tasmania	Exceptional Achievement
Victoria	40+

At the present time it is not possible to compare students' subject achievements from one jurisdiction to another. A meaningful comparison of achievements in different jurisdictions would require an analysis of the primary evidence: student work—specifically, work produced under assessment conditions. It is not found in curriculum documents, teacher work plans or assessment instruments in isolation, no matter how well stated or set those might be.

There is currently a much higher level of national consistency in VET arrangements because VET pathways in schools operate under an agreed MCEETYA policy framework, which includes collaborative approaches at national, state/territory and local levels. Delivery methods for VET vary (schools as RTOs, Institutes of TAFE, and other RTOs). But student outcomes are consistent as defined through national industry-endorsed training standards and the relevant national training package. Quality assurance standards for RTOs and VET course accrediting bodies are maintained through the AQTF.

### **Certificate requirements**

Although there is general agreement on the types of learning to be recorded on a certificate (general education/academic studies, vocational education and training, community-based learning), there is considerable variation in the requirements for the award of certificates.

Key differences are:

- whether the curriculum is divided into courses with different purposes and/or levels to meet the needs and post-school pathways of different student groups;
- the minimum number of courses, the amount of time required in each of these courses and how this is defined (eg, a semester unit is generally 50–60 hours, but in some states study outside formal class time is included in the definition);
- whether there are set requirements for the study of particular subjects (eg, English) or sets of subjects;
- how VET is incorporated (stand-alone and/or integrated into general education subjects) and therefore how transparent VET achievements are to readers of certificates; and

- the way Years 11 and 12 are treated for certification purposes (eg, whether Year 11 is viewed as a preliminary year or contributes to the achievement levels that are certified). (McKenny, 2005)

The most significant differences between existing senior secondary certificates are in certificate requirements: compulsory subjects, subject patterns, available pathways, length of time permitted for study towards the certificate, required hours of study, depth of study, weighting of what ‘counts’ for summative assessment or tertiary entrance. For example, in Queensland, the final result in a (typically) two-year course of study is judged from the ‘fullest and latest’ information from continuous assessment over Years 11 and 12), whereas in New South Wales, external examinations at the end of Year 12 count for 50 per cent of the final result.

### *Student Enrolments*

Table A8.4 shows the numbers of students who received the senior certificate in the named states and territory in 2004, and the numbers of students enrolled in six subjects that had the same name in these jurisdictions.

Table A8.4

### *Some Subject Enrolments*

	NSW	QLD	NT	SA
Certificate	62,766	39,229	1,576	16,642
Chemistry	10,187	8,721	199	2,309
Physics	10,158	6,479	174	2,262
Biology	13,026	11,920	312	4,135
Economics	5,874	3,287	89	834
Accounting	418	4,056	116	1,181
Geography	4,423	4,588	92	1,504

Table A8.5 shows, for students in South Australia, the numbers who met the requirements for the SACE, who received a Tertiary Entrance Rank, and who received a TAFE score in 2004.

Table A8.5

### *Students Meeting Requirements (SA, 2004)*

	Students
Obtained at least 1 Yr 12/Stage 2 result	16,642
Met requirements for the SACE	11,327
Received a TER	10,037
Received a TAFE score	11,411

Table A8.6 shows, for students in Western Australia, the number who were eligible for the certificate, the number who achieved it, and the numbers who did not meet the requirements for different reasons.

Table A8.6  
*Eligible Students (WA, 2004)*

	Students
Eligible for the WACE	17,401
Achieved the WACE	16,534
Did not meet requirements for award of WACE	867
- English language competence criterion not met	47
- Grade criterion not met	820

## Details of state arrangements

The following seven tables provide a State-by-State summary of arrangements as they existed in 2005, and have been used as the basis for the analysis of similarities and differences.

Each table is organised under the following set of headings and sub-headings.

- **Formalities**
  - State Certificate of Education
  - Awarding body
  - Requirements (for award<sup>20</sup> of certificate)
  - Permissible patterns of subject choice
- **Methods of Reporting/Certificating<sup>21</sup>**
  - Documentation
  - Time-span for certification
  - Nomenclature
- **Tertiary Entrance**
  - Selection mechanism
  - Eligibility (for tertiary entrance rank<sup>22</sup>)
  - Combining results for tertiary entrance
- **Incorporation of VET**
- **Curriculum**
  - Underpinning curriculum principles
  - Premises/value statements (where explicit)
  - Areas of study
  - Structure of curriculum document (syllabus/framework/course etc.)
  - Curriculum development
  - Standards setting/maintenance
- **Assessment arrangements**

<sup>20</sup> Receiving a qualification and receiving a statement of results are not necessarily the same.

<sup>21</sup> The term *certificating* is coined for the act of issuing certificates (or documents that are not actually called certificates; for example, *Statement of Attainment*). The term *certifying* is reserved for the act of attesting to the veracity of information through the use of the words 'This is to certify that ...'.

<sup>22</sup> Indices with different names in different States



- Internal (school-based)
- External
- Standardised testing
- Modes that contribute to high-stakes assessment
- **Moderation**
  - Type(s)
  - Purpose
  - Process
- **Miscellaneous**
  - Recent reviews
  - Current revision/transition arrangements.

NB: In some cases a cell of a table is deliberately empty because the cell is not relevant to that State (e.g. there is no standardised testing at Year 12 in NSW). In other cases cells are empty because the information was not readily accessible (e.g. explicit statements of values).

<b>AUSTRALIAN CAPITAL TERRITORY (ACT)</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	ACT Year 12 Certificate (the Tertiary Entrance Statement is a separate document)
<b>Awarding body</b>	ACT Board of Senior Secondary Studies
<b>Requirements</b>	<p>Student must complete a coherent pattern of study: at least 17 standard units forming at least 2 minors (A, T or M).</p> <p>Contribution per course to Certificate is max. 8 standard units.</p> <p>Classification of courses (and units within courses):</p> <p><i>A</i> – Deemed by the Board to be educationally sound and appropriate for students in Years 11 and 12.</p> <p><i>M</i> – An <i>A</i> course deemed by the Board to provide appropriate educational experiences for students who satisfy specific disability criteria.</p> <p><i>T</i> – Deemed by the Board to prepare students for higher education.</p> <p><i>V</i> – Leads to the award of a Vocational Certificate or Statement of Attainment.</p> <p><i>R</i> – Appropriate for students in Years 11 and 12; design usually includes personal development, recreational or community services activities.</p> <p>(It is possible for a course to meet the requirements of several classifications.)</p> <p>One standard unit of study represents 55 hr minimum of class time generally over 1 semester.</p> <p>Minor 2–3 standard units Major 3.5–5 standard units Major minor 5.5–6.5 standard units Double major 7–8 standard units</p>
<b>Permissible patterns of subject choice</b>	No compulsory courses. There may be mandatory units.
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	Year 12 Certificate Tertiary Entrance Statement Vocational Certificate or Vocational Statement of Attainment Secondary College Record
<b>Time-span for certification</b>	Up to 5 years One break in study of up to 1 yr allowed; with permission of college principal. Minimum of 3 (A or T or M) minor courses.
<b>Nomenclature</b>	Generic grade descriptors.  A, B, C, D and E grades awarded against course-specific descriptors. (Also see 'Standards setting/maintenance'.)  Competencies achieved under the AQF listed.
<b>TERTIARY ENTRANCE</b>	

<b>Selection mechanism</b>	University Admission Index (UAI), based on student performance in T courses, from 100.00 to 30.00. Provided on Tertiary Entrance Statement (TES).
<b>Eligibility</b>	<p>Eligibility for TES</p> <ul style="list-style-type: none"> <li>at least 20 standard units of which 18 are A or T; arranged to form at least 3 majors and 3 minors or 4 majors and 1 minor; and of these at least 3 majors and 1 minor are T;</li> <li>sit for ACT Scaling Test (AST) in final year of study.</li> </ul>
<b>Combining results of tertiary entrance</b>	<p><b>Calculating the UAI</b></p> <p>Colleges calculate a course score for each student completing a T course.</p> <p>BSSS scales the college course scores where between school differences are provided by the AST results. This ensures that all T course scores can be meaningfully compared within and across colleges.</p> <p>Each student's Aggregate Score is the sum of the scaled scores in the best three T majors plus 0.6 of the next best T score, whether a major or minor.</p> <p>Aggregate Scores for all eligible students are ranked (highest to lowest).</p> <p>Candidate rank assigned to students, starting at the top of the list.</p> <p>Rank converted to a cohort rank via a lookup table supplied by the NSW Technical Committee on Scaling.</p>
<b>INCORPORATION OF VET</b>	
Within both types of courses (T and A), there are provisions for students to study vocational courses and, to receive vocational certificates in addition to the Year 12 Certificate.	
<b>CURRICULUM</b>	
<b>Underpinning curriculum principles</b>	<p>Curriculum including training packages should:</p> <ul style="list-style-type: none"> <li>encourage students to complete secondary education in the fields of study of their choice</li> <li>be inclusive and encourage respect for the diversity of the global community</li> <li>be capable of being flexibly delivered</li> <li>be broadly based, challenging and responsive to the diverse needs and learning styles of students</li> <li>enable students to prepare for their futures in further education and training, employment, and as active citizens by: <ul style="list-style-type: none"> <li>developing knowledge and skills</li> <li>providing opportunities to explore attitudes and values, fostering physical, spiritual and creative development</li> <li>providing opportunities to participate and shape local and global communities</li> <li>providing opportunities to learn both independently and collaboratively and manage their own learning</li> </ul> </li> <li>provide students with explicit statements about the basis for assessment of students' achievements which ensure</li> </ul>

	<p>that assessment is fair, valid and reliable</p> <ul style="list-style-type: none"> <li>• enable students' achievements to be reported accurately and comprehensively</li> <li>• motivate students to continue learning throughout their lives</li> <li>• be presented in clear, coherent, comprehensive documents</li> <li>• be subject to regular review.</li> </ul>
<b>Premises/values statements</b>	<p>Underpinning beliefs</p> <ul style="list-style-type: none"> <li>• All students are able to learn.</li> <li>• Learning is a partnership between students and teachers.</li> <li>• Teachers are responsible for advancing student learning.</li> </ul> <p>Learning principles</p> <ol style="list-style-type: none"> <li>1. Prior knowledge: Learning builds on existing knowledge, understandings and skills.</li> <li>2. Connectivity: When learning is organised around major concepts, principles and significant real world issues, within and across disciplines, it helps students make connections and build knowledge structures.</li> <li>3. Meta-cognition: Learning is facilitated when students actively monitor their own learning and consciously develop ways of organising and applying knowledge within and across contexts.</li> <li>4. Self-concept: Learners' sense of self and motivation to learn affect learning.</li> <li>5. High expectations: Learning needs to take place in a context of high expectations.</li> <li>6. Individual differences: Learners learn in different ways and at different rates.</li> <li>7. Socio-cultural effects: Different cultural environments, including the use of language, shape learners' understandings and the way they learn.</li> <li>8. Collaborative learning: Learning is a social and collaborative function as well as an individual one.</li> <li>9. Explicit expectations and feedback: Learning is strengthened when learning outcomes and criteria for judging learning are made explicit and when students receive frequent feedback on their progress.</li> </ol>
<b>Areas of study</b>	Subjects within courses
<b>Structure of curriculum document</b>	<p><b>Course document</b></p> <ol style="list-style-type: none"> <li>1 Course name</li> <li>2 Classification</li> <li>3 Course framework</li> <li>4 Course developers</li> <li>5 Evaluation of previous course</li> <li>6 Course length and composition</li> <li>7 Subject rationale</li> <li>8 Goals</li> <li>8.1 Student group</li> <li>8.2 College philosophy</li> <li>9 Key content, concepts and processes</li> <li>10 Teaching and learning strategies</li> <li>11 Across curriculum perspectives</li> <li>12 Student assessment</li> <li>13 Unit grades</li> <li>14 Bibliography</li> </ol>

	15 Resources 16 Proposed evaluation procedures 17 Unit content
<b>Curriculum development</b>	<p>Course documents are based on the appropriate Course Frameworks. These courses are proposed and developed for accreditation by colleges. Course developers are responsible for detailing the content, across-curriculum perspectives, and teaching/learning strategies that implement the goals and promote student achievement within identified areas of knowledge and skill.</p> <p>Before a course can be taught it must be submitted for accreditation by the BSSS panel with representatives from tertiary institutions, schools and the community, and approved by the BSSS. Courses classified as T must be signed by the university representative. Courses classified as V must be signed by the industry representative.</p> <p>Curriculum review occurs as a 5-year rolling process.</p>
<b>Standards setting/maintenance</b>	<p>Principles for the development of unit grade descriptors</p> <ul style="list-style-type: none"> <li>• Each unit grade descriptor stands alone without requiring comparison with other unit grade descriptors.</li> <li>• Unit grade descriptors are stated in positive terms.</li> <li>• Unit grade descriptors are stated in terms of outcomes – what a student can do, quality of the student's achievements and, if appropriate, conditions/situation under which outcomes were demonstrated.</li> <li>• Unit grade descriptors do not need to make mention of every point in a criterion.</li> <li>• Descriptors of student outcomes report what has been demonstrated. Descriptors are not stated as predictors.</li> <li>• The language of the unit grade descriptors should be comprehensible to all readers and be unambiguous, with care taken to avoid unnecessary jargon.</li> <li>• Unit grade descriptors will be presented in a consistent style and format across Course Frameworks.</li> </ul> <p>Generic criteria, which form the basis of unit grade decisions across all Course Frameworks, include:</p> <ul style="list-style-type: none"> <li>• student's knowledge and understanding of the concepts and principles of the unit;</li> <li>• student's cognitive and practical skills in a wide range of situations.</li> </ul> <p>As well as representing the Course Framework-specific unit grade descriptions, the letters A, B, C, D and E can be generally understood thus:</p> <p>A: Demonstrated a very high level of knowledge and understanding of the full range of concepts and principles of the unit. Shown evidence of a very high level of cognitive and practical skill in a wide range of assessment situations.</p> <p>B: Demonstrated a high level of knowledge and understanding of the concepts and principles of the unit. Shown evidence of a high level of cognitive and practical skill in a range of assessment situations.</p> <p>C: Demonstrated a sound level of knowledge and</p>

	<p>understanding of the basic concepts and principles of the unit. Shown evidence of a sound level of cognitive and practical skill in most assessment situations.</p> <p>D: Demonstrated a limited knowledge and understanding of the basic concepts and principles of the unit. Shown evidence of a limited level of cognitive and practical skill in assessment situations.</p> <p>E: Demonstrated a very limited knowledge and understanding of the basic concepts and principles of the unit. Shown evidence of a very limited level of cognitive and practical skill in assessment situations.</p>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	Externally moderated, continuous school-based assessment Criterion-based; standards-referenced
<b>External</b>	There are no examinations set by a central authority for any subject.
<b>Standardised testing</b>	The ACT Scaling Test (AST) measures skills considered necessary for success at university. The AST provides group results for calculating the UAI. The test consists of a 2.5 hr multiple-choice test of 80 questions, a 2.5 hr writing test, and a 1.5 hr short-response test.
<b>Modes that contribute to high-stakes assessment</b>	A range of task types (as outlined in Course Framework and Course document).
<b>MODERATION</b>	
<b>Type</b>	Consensus (a type of social) and statistical
<b>Purpose</b>	To ensure consistency of teacher judgments and comparability of standards in reported grades. Statistical moderation ensures comparability of scores before aggregation to calculate UAIs.
<b>Process</b>	<p>Structured peer-review of standards and validation of unit grades assigned to student assessment portfolios Yrs 11 and 12 for all accredited courses; by matching student performance to criteria and standards outlined in the unit grade descriptors as stated in the Course Framework</p> <p>Advice given to colleges to assist teachers with, and/or reassure them on, their judgments.</p> <p>The broad processes of moderation include:</p> <ul style="list-style-type: none"> <li>• Establishment of system-wide assessment requirements, criteria and standards in Board Course Frameworks;</li> <li>• Accreditation of colleges' programs of study (courses) from which student results may be recorded on Board certificates;</li> <li>• Validation of portfolios of student assessment responses (Yrs 11 and 12) to establish standards and maintain comparability of assessment outcomes;</li> <li>• Feedback to colleges about consensus-based grade decisions;</li> <li>• Development of college action plans to address problems arising from the review process.</li> </ul> <p>All (1100 approx.) senior secondary teachers participate in the review process twice a year.</p>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	System is under continuous analysis and review.

<p><b>Current revision/ transition arrangements</b></p>	<p>Existing policies on Key Competencies and Goals for the Year 12 Certificate are to be replaced with the following statement.</p> <p><i>All programs of study for the ACT Year 12 Certificate should enable students to become</i></p> <ul style="list-style-type: none"> <li>• <i>creative and critical thinkers</i></li> <li>• <i>enterprising problem-solvers</i></li> <li>• <i>skilled and empathetic communicators</i></li> <li>• <i>informed and ethical decision-makers</i></li> <li>• <i>environmentally and culturally aware citizens</i></li> <li>• <i>confident and capable users of technologies</i></li> <li>• <i>independent and self-managing learners</i></li> <li>• <i>collaborative team members</i></li> </ul> <p><i>and provide students with</i></p> <ul style="list-style-type: none"> <li>• <i>a comprehensive body of specific knowledge, principles and concepts</i></li> <li>• <i>a basis for self-directed and lifelong learning</i></li> <li>• <i>personal attributes enabling effective participation in society.</i></li> </ul> <p>Existing policy on Across Curriculum Perspectives to be replaced by reference to the above statement and to the set of Learning Principles underpinning Course Frameworks.</p>
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<b>NEW SOUTH WALES</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	Higher School Certificate (HSC)
<b>Awarding body</b>	Board of Studies NSW
<b>Requirements</b>	<p>Student has:</p> <ul style="list-style-type: none"> <li>gained the School Certificate or other qualifications considered satisfactory by Board;</li> <li>attended a government school, an accredited non-government school, an institute of TAFE NSW or a Board-recognised school outside NSW;</li> <li>satisfactorily completed courses that comprise the required pattern of study;</li> <li>sat for and made a serious attempt at the required HSC examination(s).</li> </ul>
<b>Permissible patterns of subject choice</b>	<p>Satisfactory completion of a Preliminary pattern of study comprising at least 12 units and an HSC pattern of study comprising at least 10 units. Both patterns must include:</p> <ul style="list-style-type: none"> <li>at least 6 units of Board-developed courses;</li> <li>at least 2 units of a Board-developed course in English;</li> <li>at least 3 courses of unit value at least 2 (can be Board-developed or -endorsed courses);</li> <li>at least 4 subjects.</li> </ul> <p>Maximum units from Science courses = 6 Preliminary and 6 HSC.</p>
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	<p><i>Testamur</i> For student who meets all requirements – Higher School Certificate (HSC), showing student name and school name</p> <p><i>Higher School Certificate Record of Achievement</i> For student who satisfactorily completes at least 1 Preliminary or 1 HSC course – lists all courses satisfactorily completed and results therein, and courses satisfactorily completed in previous years; does not list courses studied but not satisfactorily completed.</p> <p><i>Course Report</i> For each Board-developed HSC course completed and presented for examination:</p> <ul style="list-style-type: none"> <li>moderated school assessment mark (except in VET courses)</li> <li>external examination mark</li> <li>HSC mark (average of assessment and examination marks)</li> <li>performance band with description of what a typical student knows and can do at each level of achievement (bands 1–6 shown with 6 representing highest level of achievement)</li> <li>graph showing student's HSC mark relative to HSC marks for course candidature.</li> </ul> <p><i>AQF Certificate or Statement of Attainment</i> For student who meets requirements for at least 1 Board-developed VET course</p> <p><i>Profile of Student Achievement</i> For student who meets requirements for at least 1 Board-developed Life Skills course</p>
<b>Time-span for certification</b>	Accumulation of HSC courses and Preliminary courses allowed over 5-year rolling period that starts in first year of completion of an HSC course. Deletion of earliest year's presentation for students going beyond 5 yrs.



<b>Nomenclature</b>	Subject result is mark out of 100. Subject mark locates student result in an achievement band from Band 1 (highest) to Band 1 (lowest). HSC mark expressed numerically and graphically so that reader can relate student performance to corresponding descriptor and to her/his position in subject cohort.
<b>TERTIARY ENTRANCE</b>	
<b>Selection mechanism</b>	Index based on senior secondary school results, the UAI (Universities Admission Index), calculated by the universities in NSW via the Universities Admissions Centre (UAC)
<b>Eligibility</b>	The UAI is based on best 10 Board-developed units, including 2 of English. Board-developed courses must include at least 3 courses of at least 2 units and at least 4 subjects. Can include up to 2 units of Category B courses. Board-endorsed course results do not count towards the UAI.
<b>Combining results for tertiary entrance</b>	<p><b>Calculating the UAI</b></p> <p>Step 1: Scaling HSC marks Quality of a subject's candidature defined in terms of their other-subject performances. Process modifies the mean, standard deviation and maximum mark in a course. Maximum mark in a course is related to the mean of the scaled marks in that course (to discourage students from taking easy courses in order to get high marks).</p> <p>Step 2: Combining scaled HSC marks Each student's scaled HSC marks are added together to produce that student's aggregate score (interim calculation not reported).</p> <p>Step 3: Ranking aggregate scores All students' aggregate scores placed in rank order. Individual student ranking expressed as position in the entire age cohort expressed as a percentile. This is the UAI.</p> <p>Step 4: Providing the UAI Students receive their UAI from UAC.</p>
<b>INCORPORATION OF VET</b>	
<p>Board-developed industry curriculum framework courses: Examination optional, result appears on <i>Record of Achievement</i> as HSC mark within a performance band. Can be included in UAI calculation if exam undertaken.</p> <p>Board-endorsed VET courses (content is endorsed): Delivered by TAFE NSW. Count as units of study towards HSC but do not contribute to UAI. Course name and unit value (no assessment mark) appear on <i>Record of Achievement</i>.</p> <p>Locally designed VET courses: Subject to Board endorsement</p> <p>Where eligible: <i>AQF Certificate</i> and statement of competencies achieved or a <i>Statement of Attainment</i></p>	
<b>CURRICULUM</b>	
<b>Underpinning curriculum principles</b>	<ul style="list-style-type: none"> <li>• Encourage students to complete secondary education.</li> <li>• Foster the intellectual, social and moral development of students, in particular: <ul style="list-style-type: none"> <li>– Knowledge, skills, understanding and attitudes in the fields of study</li> <li>– Capacity to manage their own learning</li> <li>– Desire to continue learning in formal or informal settings after school</li> <li>– Capacity to work with others</li> <li>– Respect for the cultural diversity of Australian society.</li> </ul> </li> <li>• Provide a flexible structure within which students can prepare for further education and training, employment, and full and active participation as citizens.</li> </ul>

	<ul style="list-style-type: none"> <li>• Provide formal assessment and certification of students' achievements.</li> <li>• Provide a context within which schools also have the opportunity to foster students' physical and spiritual development.</li> </ul>
<b>Premises/value statements</b>	<p>Support the pursuit of excellence.  Support quality teaching and learning.  Encourage personal growth and self-confidence.  Promote a fair and just society.  Value diversity.  Encourage English language literacy.  Are environmentally sensitive.</p>
<b>Areas of study</b>	<p>Subject is the general name given to an area of study that may have several different courses (e.g. within subject English, courses include English Standard, English Advanced, English Life Skills). Course is a branch of study within a subject. There can be more than one level of study within a course.</p>
<b>Structure of curriculum document</b>	<p><b>Syllabus</b></p> <ol style="list-style-type: none"> <li>1. The Higher School Certificate Program of Study</li> <li>2. Rationale for [Subject] in the Stage 6 Curriculum</li> <li>3. Continuum of Learning for [Subject] Stage 6 Students</li> <li>4. Aim</li> <li>5. Objectives</li> <li>6. Course Structure</li> <li>7. Objectives and Outcomes <ol style="list-style-type: none"> <li>7.1. Table of Objectives and Outcomes</li> <li>7.2. Key Competencies</li> <li>7.3. Course Overview</li> </ol> </li> <li>8. Content <ol style="list-style-type: none"> <li>8.1. Preliminary Course</li> <li>8.2. HSC Course</li> </ol> </li> <li>9. Course Requirements</li> <li>10. Post-school Opportunities</li> <li>11. Assessment and Reporting <ol style="list-style-type: none"> <li>11.1. Requirements and Advice</li> <li>11.2. Internal Assessment</li> <li>11.3. External Examination</li> <li>11.4. Board Requirements for the Internal Assessment Mark in Board Developed Courses</li> <li>11.5. Assessment Components, Weightings and Tasks</li> <li>11.6. HSC External Examination Specifications</li> <li>11.7. Summary of Internal and External Assessment</li> <li>11.8. Reporting Student Performance Against Standards</li> </ol> </li> <li>12. Glossary/appendix</li> </ol>
<b>Curriculum development</b>	<p>Occurs in following stages:</p> <ul style="list-style-type: none"> <li>• Syllabus review: evaluate, consult, research, recommend.</li> <li>• Writing-brief development: write brief, consult, identify issues, revise brief.</li> <li>• Syllabus development: draft; consult; address issues; report on meeting Board criteria; modify; to Curriculum Committee, then Board, then Minister; brief schools; distribute.</li> </ul>
<b>Standards setting/maintenance</b>	<p>Outcome statements written during development of new syllabuses. Along with course content, outcome statements guide teachers as to the knowledge, skills and understanding students are to develop through studying that course. Teams of experienced teachers considered student responses, statistical data and other materials from past HSC examinations, and prepared short statements (band descriptions) to</p>

	<p>summarise different levels of performance in the course.</p> <p>Mark of 90–100 corresponds to performance band 6; 80–89, band 5; 70–79, band 4; 60–69, band 3; 50–59, band 2; &lt;50, band 1 (referred to as below minimum standard expected). There is no statement for band 1.</p>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	<p>School-based assessments count for 50% of HSC. The exceptions are VET courses, Board Endorsed courses and Life Skills courses.</p> <p>Expressed as a mark on a scale with ordinal and interval properties</p> <p>Schools prepare and administer an assessment program in accordance with mandatory assessment components and weightings (as per corresponding syllabus). School determines timing and weighting of assessment tasks. Board recommends:</p> <ul style="list-style-type: none"> <li>• 3–5 tasks</li> <li>• weighting of each individual task at least 10% and up to 40% of total assessment</li> <li>• higher weightings for tasks towards end of the assessment program</li> <li>• outcomes and components assessed by more than one task.</li> </ul> <p>Schools submit students' marks in HSC Board-endorsed courses to Board.</p>
<b>External</b>	<p>External examinations count for 50% of HSC. The exceptions are VET courses, Board Endorsed courses and Life Skills courses.</p> <p>Focuses on a sample of course outcomes in any one year (expectation that all outcomes able to be assessed in an examination are covered by the exam across a number of years).</p>
<b>Standardised testing</b>	—
<b>Modes that contribute to high-stakes assessment</b>	<p>HSC examination may involve more than one component, such as written examination, submitted work or practical examination. Some courses require practical examinations or submission of works (e.g. Dance, Industrial Technology).</p> <p>Internal assessment may include tests, written assignments, practical activities, fieldwork, and projects—a wider range of modes than external, aim being to assess a wide range outcomes.</p>
<b>MODERATION</b>	
<b>Type</b>	Statistical
<b>Purpose</b>	To ensure that marks from internal assessment and external examination are aligned to the same standard
<b>Process</b>	<p>For each course-group in a school, mean school assessment mark is set to be equal to mean examination mark, top school assessment mark to top examination mark and, where possible, bottom school assessment mark to bottom examination mark. Cut scores for each performance band are established through a standards setting process using subject experts (judges).</p> <p>Examination marks and school assessment marks expressed on a scale with anchors (70, 80, 90) to the boundaries between standards. Student's HSC mark in course is average of examination mark and moderated school assessment mark.</p>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	<p><i>Shaping Their Future</i> (McGaw, 1996) made recommendations to Government, adopted in White Paper, <i>Securing Their Future</i> (1997):</p> <ul style="list-style-type: none"> <li>• Setting and marking of examinations to incorporate standards-referenced approach;</li> <li>• Syllabuses rewritten</li> <li>• Curriculum structure simplified and made more coherent</li> </ul>

	<ul style="list-style-type: none"> <li>Form of reporting to give more information to students than does a mark related to position in State.</li> </ul> <p>New HSC first examined in 2001.</p> <p><i>Fair and Meaningful Measures?</i> (Masters, 2002) reviewed the New HSC examination program.</p>
<b>Current revision/ transition arrangements</b>	—

<b>NORTHERN TERRITORY</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	Northern Territory Certificate of Education (NTCE)
<b>Awarding body</b>	Northern Territory Board of Studies (NTBS)
<b>Requirements</b>	<p>Student must undertake at least 22 one-semester units, including:</p> <ul style="list-style-type: none"> <li>• required units at Stages 1 and 2 (see 'Permissible patterns' below)</li> <li>• three 2-unit sequences at Stage 2</li> <li>• up to 9 free choice units at Stage 1 and/or Stage 2.</li> </ul> <p>Student must:</p> <ul style="list-style-type: none"> <li>• reach 'satisfactory achievement' in at least 16 of the 22 units, including three 2-unit sequences at Stage 2, and reach at least 'recorded achievement' in the remaining 6 units;</li> <li>• reach a satisfactory standard in the writing-based literacy assessment.</li> <li>•</li> </ul>
<b>Permissible patterns of subject choice</b>	<p>The required units at Stage 1 (generally Yr 11) and/or Stage 2 (generally Yr 12) are:</p> <p>Stage 1: English or ESL (2); Mathematics (1); Group 1 – Arts/humanities/social and cultural studies (2); Group 2 – Mathematics/science/technology (2).</p> <p>Stage 2: Group 1 – Arts/humanities/social and cultural studies (2); Group 2 – Mathematics/science/technology (2).</p>
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	<p><i>Northern Territory Certificate of Education</i> Certifies satisfactory completion of the required program of study for senior secondary students.</p> <p><i>Record of Achievement</i> The Record of Achievement records course results that count towards Stages 1 and 2 of the NTCE, and progress towards completing the requirements for the NTCE. A Statement of Results that is a cumulative record of all results for NTCE studies may be issued on request. Cumulative record of all subjects with result either Recorded Achievement or Satisfactory Achievement. Also lists units of credit towards NTCE. Issued to students with Recorded Achievement in at least 1 subject.</p> <p><i>Vocational Education and Training Information</i> [sheet] Records modules and units of competency as recognised within the AQF. Information provided by schools or RTOs. Issued on completion of NTCE.</p> <p><i>Higher Education Entrance Information</i> [sheet] Shows information relevant to university and TAFE entrance, including tertiary entrance points, university aggregate, and tertiary entrance rank (TER).</p>
<b>Time-span for certification</b>	Although most students complete the certificate in 2 yrs, it can be done part-time for as many years as required.
<b>Nomenclature</b>	The grading system for NTBS courses uses a score of 1 to 20 and an alphabetical scale of A to E.

	<p>A 20 outstanding achievement  A 17 to 19 very high achievement  B 14 to 16 high achievement  C 11 to 13 competent achievement  D 8 to 10 marginal achievement  E 1 to 7 low achievement</p>
<b>TERTIARY ENTRANCE</b>	
<p>Index based on senior secondary school results, the Tertiary Entrance Rank (TER), issued by SSABSA at the request of SATAC (see 'South Australia').</p> <p>The TER is derived from the university aggregate, which is based on tertiary entrance points for best 5 scaled full-year (or equivalent) Stage 2 subjects.</p> <p><b>Calculating the TER</b></p> <ul style="list-style-type: none"> <li>• Tertiary entrance points calculated for all Stage 2 subjects using a scaling procedure.</li> <li>• University aggregate calculated as the total of the tertiary entrance points for best 3 full-year Stage 2 subjects plus half the tertiary entrance points for the 5<sup>th</sup> best subject, using the better of the subject achievement or scaled score for each subject.</li> <li>• TER derived from university aggregate and reported as a number between 0 and 99.95.</li> </ul>	
<b>CURRICULUM</b>	
<p>Senior secondary students in the NT undertake subjects developed and accredited by the Senior Secondary Assessment Board of South Australia (SSABSA).</p> <p>Studies are divided into Stage 1, Year 11, and Stage 2, Year 12. Stage 1 and some Stage 2 courses are offered by the NTBS. NTBS Accredited courses that require a full year of study require approximately 120 hours of class time and count as two units. Half-year or semester courses require approximately 60 hours and count as one unit. NTBS Endorsed courses include VET approved modules or combination of modules and may be developed by other agencies such as TAFE colleges or recognised industry groups. NTBS courses are not accepted for admission to university.</p> <p>Most Stage 2 courses are offered under contract with SSABSA.</p> <p>For details, see relevant entries in table for South Australia.</p>	
<b>ASSESSMENT ARRANGEMENTS</b>	
<p>In Stage 1, assessment of NTBS-accredited courses is school-based according to approved moderation schemes. Assessment of NTBS-endorsed courses varies depending on the nature and source of the course. Stage 2 courses are assessed and moderated under contractual arrangements with SSABSA. Information about assessment of SSABSA subjects is in the table on South Australia later in this appendix.</p>	
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	<p>Until the end of 1996, the South Australia Certificate of Education–Northern Territory was awarded.</p>
<b>Current revision/ transition arrangements</b>	<p>The Northern Territory Department of Education is currently conducting a review of curriculum, assessment and certification, which may lead to some changes in secondary education.</p>

<b>QUEENSLAND</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	Senior Certificate (the Tertiary Entrance Statement is a separate document)
<b>Awarding body</b>	Queensland Studies Authority (QSA)
<b>Requirements</b>	<p>For a Senior Certificate a student has:</p> <ul style="list-style-type: none"> <li>completed 12 years in full-time schooling;</li> <li>remained at school until a prescribed date;</li> <li>obtained a result in at least 1 semester in at least 1 area of study (any category).</li> </ul> <p>A Certificate of Post Compulsory School Education (CPCSE) is awarded to students who have impairment or difficulties in learning that are not primarily due to socioeconomic, cultural and/or linguistic factors.</p>
<b>Permissible patterns of subject choice</b>	<p>No compulsory subjects for award of Senior Certificate.</p> <p>No restrictions on subject choice.</p>
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	<p><i>Senior Certificate</i></p> <ul style="list-style-type: none"> <li>Lists names and number of semester units studied for Authority and Authority-registered subjects</li> <li>Records levels of achievement (VHA–VLA) for Authority and Authority-registered subjects</li> <li>Records grade (A–E) on QCS Test (not all students sit the test)</li> <li>Records achievements in VET (where applicable)</li> <li>Records results in recorded subjects (where applicable)</li> </ul> <p><i>Certificate of Post-Compulsory School Education (CPCSE)</i></p> <p>Reports the achievements of students on highly individualised learning programs. Statements are subject to guidelines and quality processes defined by the QSA. There are three sections:</p> <ul style="list-style-type: none"> <li>statement of achievement</li> <li>accredited vocational education</li> <li>statement of participation</li> </ul> <p><i>Tertiary Entrance Statement</i></p> <p>See 'Selection Mechanism' below for details.</p>
<b>Time-span for certification</b>	Usually represents 2 years of senior schooling (Yrs 11 & 12) but variable progression rates can apply.
<b>Nomenclature</b>	<p>Senior Certificate</p> <ul style="list-style-type: none"> <li>For Authority and Authority-registered subjects there are 5 levels of achievement from Very High to Very Limited: VHA, HA, SA, LA, VLA.</li> <li>For vocational education programs results are recorded as units of</li> </ul>

	<p>competency/modules.</p> <ul style="list-style-type: none"> <li>For recorded subjects, once the QSA approves the category of results for recording on the certificate, the nomenclature for reporting achievement is that used by the external agency.</li> <li>For QCS result, there are 5 grades from A to E.</li> </ul> <p>CPCSE</p> <ul style="list-style-type: none"> <li>Statements of achievement describe demonstrated student achievement in up to 6 curriculum organisers.</li> <li>The AQF provides the basis for a nationally consistent, high-quality vocational education and training system. Results like units of competency/modules from RTOs may appear on the CPCSE.</li> <li>Statements of participation are lists of activities undertaken by the student during post-compulsory schooling.</li> </ul>
<b>TERTIARY ENTRANCE</b>	
<b>Selection mechanism</b>	<p>Student's position in statewide rank orders based on: overall achievement in Authority subjects, expressed as the OP (Overall Position); and up to five fields (areas of study that emphasis particular knowledge and skills), expressed as FPs (Field Positions). Calculated by QSA for the Queensland Tertiary Admissions Centre (QTAC) representing the universities in Queensland. Reported on the <i>Tertiary Entrance Statement</i>. The OP is a number from 1 (highest) to 25. The FP is a number from 1 (highest) to 10 for each of fields A, B, C, D and E.</p>
<b>Eligibility</b>	<p>To be OP-eligible, a student must:</p> <ul style="list-style-type: none"> <li>study 20 semester units of Authority subjects including at least 3 subjects for 4 semesters;</li> <li>sit for the Queensland Core Skills (QCS) Test.</li> </ul>
<b>Combining results for tertiary entrance</b>	<p>Information used in the calculation of OPs (and FPs) comes from teacher assessment of student achievement in Authority subjects and group scores on the QCS Test. The calculation of OPs involves two stages of scaling – between subjects within a school and between schools. Scaling aims to remove the bias that may be caused by differences in the competition in different subject-groups and school-groups.</p> <p><b>Calculating the OP</b></p> <p>First stage of scaling: The within-school stage The purpose of the first stage of scaling, the within-school stage, is to make it possible to compare the achievement of students in one subject in the school with the achievement of</p>



	<p>students in other subjects in the school. For this a standard baseline of comparison is needed. This baseline of comparison is provided by the Queensland Core Skills (QCS) Test.</p> <p>To produce a single rank order of students within the school, an Overall Achievement Indicator (OAI) is calculated. This is the average result across each student's best five subjects.</p> <p>The second stage of scaling: The between-school stage The first stage of scaling produces a single rank order within each school given by each student's OAI. The second (between-school) stage of scaling allows these rank orders to be compared across all schools. For large schools (more than 19 students) the average and spread of the OAIs for each school are re-set (scaled) to the average and spread of QCS Test scores for all the students in that school.</p> <p>Scaled OAIs place students in a single rank order across the whole State. However, they are calculated to a greater degree of precision than it is reasonable to report. Therefore, students are 'banded' so that students who have performed very similarly are not falsely reported as being very different. Banding also ensures that the results are relatively stable and not vulnerable to minor uncertainties in subject results. The cut-off for each OP is set each year so that there is approximate comparability with the standard of performance required to reach that OP in the previous year. This means that OPs are directly comparable from year to year.</p> <p><b>Calculating FPs</b></p> <p>Involves only one stage of scaling (between subjects).</p> <p>Unlike the OP where subjects are equally weighted, subjects are weighted differently for each of the five fields according to their emphasis on: extended written expression involving complex analysis and synthesis of ideas (Field A); short written communication involving reading, comprehension and expression in English or a foreign language (Field B); basic numeracy involving calculations and graphical and tabular interpretation (Field C); solving complex problems involving mathematical symbols and abstractions (Field D); substantial practical performance involving physical or creative arts or expressive skills (Field E).</p>
<b>INCORPORATION OF VET</b>	
QSA has a delegation to accredit courses, recognise vocational placement schemes and register schools for the delivery of VET to AQF level 11 (level 111 – Information	

Technology). Schools can register to deliver VET as an RTO or deliver in partnership with an RTO. Schools that are RTOs are required to comply with AQTF Standards for RTOs as stand-alone VET.

Schools deliver vocational education through Study Area Specifications (SASs), through Authority subjects with embedded VET or through discrete courses leading to a VET Certificate.

## **CURRICULUM**

### **Underpinning curriculum principles**

The following educational and operational criteria are to be addressed during the stages of syllabus development. All committees use this checklist in their recommendation of syllabuses for general or trial-pilot implementation.

#### **Educational criteria**

An Authority subject should contribute to the education of students by providing: opportunities to develop a range of intellectual, technological and operational skills, including the Key Competencies. The Key Competencies are: collecting, analysing and organising information; communicating ideas and information; planning and organising activities; working with others and in teams; using mathematical ideas and techniques; solving problems; and using technology.

- the best possible balance of practical experience, abstraction and reflection appropriate to the subject
- opportunities to acquire the specific knowledge and skills in the subject
- a sound basis for developing values and attitudes appropriate to students' future participation in a democratic and pluralistic society, of which the work environment is a significant component
- challenges appropriate to the developmental level of the students for whom the subject is designed
- opportunities for students to develop the highest level of literacy and numeracy skills in the context of the subject
- opportunities which encourage the development of, and understanding and respect for, our heritage and cultural diversity, including Aboriginal and Torres Strait Islander and ethnic communities
- scope for critical thinking and the generation of questions, ideas, goals and visions of the future
- access for a range of students, including those with disabilities, while maintaining the integrity of the subject and the Senior Certificate
- appropriate articulation with P–10 syllabuses and post-school environments (higher education, further education, work and leisure).

	<p>Operational criteria</p> <ul style="list-style-type: none"> <li>• The syllabus conforms to the framework used by the Authority to develop syllabuses and is readily distinguishable from any other Authority syllabuses in terms of its rationale and global aims.</li> <li>• The time allocation is not less than the minimum time stated by the Authority.</li> <li>• Work programs are subject to the accreditation procedures of the Authority.</li> <li>• Assessments of student achievement are subject to the full moderation procedures of the Authority.</li> <li>• No two Authority subjects have the same name.</li> </ul>
<b>Premises/value statements</b>	—
<b>Areas of study</b>	<p>Authority area of learning (subject): a syllabus is approved and published by the QSA; a school develops a course of study (known as a work program) based on an approved syllabus; work programs are subject to QSA's quality assurance procedures; assessment of student achievement subject to QSA's full moderation procedures. Results can count in OP calculation.</p> <p>Authority-registered area of learning (subject): Study area specifications (SASs) are framework courses that provide details of courses of study in Authority-registered subjects. For each Authority-registered subject developed from an SAS which a school offers, a study plan is developed, outlining the scope and sequence of subject matter and the assessment for the subject. Study plans must be approved by the QSA.</p> <p>An individual school may develop an Authority-registered subject in areas not covered by study area specifications. Schools write a work program, which is submitted to the QSA for approval.</p> <p>Results in Authority-registered subjects are not moderated by the QSA. Results do not count in OP calculation.</p> <p>A Recorded subject is a subject, other than an Authority subject of Authority-registered subject, offered by an educational institution approved by the QSA, the results of which are recorded on the QSA's Senior Certificates. The QSA's procedures for moderation of standards of achievement do not apply to results in these subjects. Results do not count in OP calculation.</p> <p>All VET achievements may be recorded on the Senior Certificate.</p>

<b>Structure of curriculum document</b>	<b>Syllabus</b>  Section headings are: <ul style="list-style-type: none"> <li>• Rationale</li> <li>• Global aims <ul style="list-style-type: none"> <li>– General objectives</li> <li>– Process objectives</li> <li>– Content objectives</li> <li>– Skill objectives</li> </ul> </li> <li>• Affective objectives (not assessed for award of levels of achievement)</li> <li>• Language education statement</li> <li>• Course organisation</li> <li>• Core</li> <li>• Learning experiences</li> <li>• Assessment criteria</li> <li>• Work program requirements</li> <li>• Educational equity statement</li> <li>• Resources</li> </ul>
<b>Curriculum development</b>	<p>Syllabuses developed by QSA subject advisory committees, one committee per subject or group of subjects, membership drawn from practising preschool, primary, secondary and tertiary teachers. Syllabus identifies general objectives of learning in that subject.</p> <p>Process for new or revised syllabuses comprises: development proposal, development, trial/pilot in schools, evaluation by independent researchers, revision if necessary, final approval by QSA governing body, and general implementation. During trial/pilot stages, only a small number of schools have approval to teach the subject. After its approval for general implementation, subject can be offered by any school that complies with QSA's quality assurance requirements.</p>
<b>Standards setting/maintenance</b>	<p>Level of achievement is an assessment provided by teachers of how well a student met the achievement criteria and standards for a particular subject. The level of achievement is an indication of the global level of performance in the subject at the termination of a course of study in that subject. The criteria for awarding a particular exit level are contained in the subject syllabus.</p> <p>Achievement level statements (a) are couched in ordinary terms and refer (as far as possible) to contexts familiar not only to teachers but also to parents, employers, and students themselves, (b) are specific in describing actual student achievements, and (c) indicate both those aspects which are firm requirements for the award of a particular achievement level, and the extent to which some accomplishments can be substituted for others.</p> <p>Achievement level statements consist of descriptions of typical achievements in a subject</p>

	<p>at each of the five levels, VHA through VLA. In particular they spell out the special or distinctive nature of attainments in the subject and reflect its basis in a discipline.</p> <p>Achievement level statements clarify what students have to do to be awarded VHA, VLA, or something in between.</p> <p>The statements should, as far as possible, avoid:</p> <ul style="list-style-type: none"> <li>• undefined elements</li> <li>• norm referencing</li> <li>• tautology</li> <li>• mandatory score ranges.</li> </ul> <p>They should, in contrast, be characterised by:</p> <ul style="list-style-type: none"> <li>• appropriate language</li> <li>• generic description of achievements</li> <li>• explicit policy on permissible tradeoffs and minimum requirements.</li> </ul>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	<p>Externally moderated school-based assessment Criteria-based Continuous</p> <p>Assessment criteria: information on the components for assessing the subject criteria and determining levels of achievement, including criteria-based principles of assessment, assessment techniques, standards descriptors and requirements for review folios.</p>
<b>External</b>	<p>No external examinations for students in full-time schooling.</p> <p>External examinations are available to those students not able to attend a secondary school—mature-age students and school-age students precluded by distance, disability or chronic illness from attending a secondary school. (Special permission granted to internal students where a subject is not offered at their school.)</p>
<b>Standardised testing</b>	<p>The QCS Test, administered to Year 12 students over 2 days in August/September, measures achievement in cross-curriculum skills. There are three modes of assessment – extended writing (2 hr), short response (2 hr), and multiple-choice (3 hr).</p> <p>The QCS Test provides individual results reported on the Senior Certificate as one of five grades (A–E).</p> <p>The QCS Test provides group results for calculating OPs and FPs, which are reported on the Tertiary Entrance Statement.</p> <p>OP-eligible students must sit the QCS Test. OP-</p>

	ineligible students may choose to sit the QCS Test.
<b>Modes that contribute to high-stakes assessment</b>	The parameters for the assessment program used to award Levels of Achievement are stipulated in each syllabus. These parameters are set in accordance with the criteria and standards which are also stipulated in each syllabus. Assessment programs typically comprise written assignments, written tests, practical performances; and oral presentations. Typically about six pieces of assessment administered during Year 12 are used to determine Levels of Achievement. Most pieces enable the assessment of more than one criterion.
<b>MODERATION</b>	
<b>Type</b>	Consensus (a type of Social Moderation)
<b>Purpose</b>	To ensure that assessments given by schools meet minimum standards and are comparable across the State
<b>Process</b>	<p>Based on a close partnership between QSA and schools. QSA contributes the design, operation and servicing of the structures that allow the system to operate. It accepts the responsibility for training the people who serve on review panels to review schools' work programs and student results. On their part, schools contribute the services of teachers as review panelists, and are responsible for developing and implementing work programs in line with syllabuses, and for assessing student work against statewide standards. They collect the student work samples and capture the data necessary for their students to receive Senior Certificates.</p> <p>The various stages in moderation are:</p> <ol style="list-style-type: none"> <li>1. work program and study plan approval</li> <li>2. monitoring of Year 11 standards</li> <li>3. verification and comparability of Year 12 standards</li> <li>4. confirmation of Year 12 results</li> <li>5. random sampling (post hoc)</li> </ol>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	<i>Queensland the Smart State – Education and Training Reforms for the Future: A White Paper</i> (2002) which led to the introduction of new Queensland Certificate of Education (QCE) commencing for the Year 10 cohort in 2006.
<b>Current revision/transition arrangements</b>	The Senior Certificate will be issued to young people enrolled in Year 12 in 2006 and Year 12 in 2007, and to some students who are on variable progression rates in later years. Students enrolled in Year 12 in 2008 will be awarded a QCE if they meet the required conditions. Students who complete Year 12 without meeting the requirements for a QCE will

	receive a Senior Statement. The infrastructure and processes for the calculation of OPs remain unchanged.
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<b>SOUTH AUSTRALIA</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	The South Australian Certificate of Education (SACE)
<b>Awarding body</b>	Senior Secondary Assessment Board of South Australia (SSABSA)
<b>Requirements</b>	<p>Student must:</p> <ul style="list-style-type: none"> <li>• undertake specified studies at Stages 1 and 2</li> <li>• study up to 8 free-choice units</li> <li>• meet the required standards.</li> </ul> <p>Standards required to qualify for the SACE:</p> <ul style="list-style-type: none"> <li>• at least Recorded Achievement in 22 units of study and Satisfactory Achievement in at least 16 of the 22 units, including at least 6 units (3 x 2-unit sequences) at Stage 2</li> <li>• satisfactory completion of the 4 components of Writing Based Literacy Assessment (WBLA).</li> </ul>
<b>Permissible patterns of subject choice</b>	<p><b>Specified studies</b></p> <p>Stage 1 (usually Year 11)</p> <p>Literacy</p> <ul style="list-style-type: none"> <li>• The writing-based literacy assessment (WBLA)</li> <li>• 2 units of English or English as a Second Language</li> </ul> <p>Numeracy</p> <ul style="list-style-type: none"> <li>• 1 unit of Mathematics</li> </ul> <p>Active participation in Australian society</p> <ul style="list-style-type: none"> <li>• 1 unit of Australian Studies</li> </ul> <p>Breadth</p> <ul style="list-style-type: none"> <li>• 2 units from Group 1 subjects (arts/humanities/social and cultural studies)</li> <li>• 2 units from Group 2 subjects (mathematics/science/technology)</li> </ul> <p>Stage 2 (usually Year 12)</p> <p>Breadth</p> <ul style="list-style-type: none"> <li>• 2 units from Group 1 subjects</li> <li>• 2 units from group 2 subjects</li> </ul> <p>Depth</p> <ul style="list-style-type: none"> <li>• 3 x 2-unit sequences</li> </ul> <p><b>Free-choice units:</b> up to 8 from Stages 1 and 2 subjects</p>
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	<p><i>The South Australian Certificate of Education</i></p> <p><i>Record of Achievement</i></p> <ul style="list-style-type: none"> <li>• Stage 1 subjects with satisfactory achievement or recorded achievement</li> <li>• VET or community-based learning units for which status has been granted</li> <li>• Stage 2 subjects with Subject Achievement Score at least 3 (on 20-point scale).</li> </ul> <p><i>Tertiary Entrance Statement (obverse of Record of Achievement)</i></p>
<b>Time-span for certification</b>	No time limits apply.



<b>Nomenclature</b>	<p>For Stage 2 (usually Yr 12) subjects: Subject Achievement Scores (20-point scale) reported as grades: A (20–17) B (16–14) C (13–11) D (10–8) E (7–0)</p> <p>For Stage 1 (usually Yr 11) subjects: SA satisfactory achievement RA recorded achievement RNM requirements not met</p>
<b>TERTIARY ENTRANCE</b>	
<b>Selection mechanism</b>	Index based on senior secondary school results, the Tertiary Entrance Rank (TER), calculated by SSABSA on behalf of the universities and TAFE
<b>Eligibility</b>	<p>Eligibility for the university aggregate (precursor to the TER):</p> <ul style="list-style-type: none"> <li>• qualified for the SACE</li> <li>• Subject Achievement Score of at least 3 (out of 20) for 5 scalable Stage 2 subjects in a maximum of 3 attempts (not necessarily in consecutive years)</li> <li>• compliance with rules regarding precluded subject combinations and counting restrictions.</li> </ul>
<b>Combining results for tertiary entrance</b>	<p>The TER is derived from the university aggregate, which is based on tertiary entrance points for best 5 scaled full-year (or equivalent) Stage 2 subjects.</p> <p><b>Calculating the TER</b></p> <ul style="list-style-type: none"> <li>• Add scaled scores (or tertiary entrance points) for the student's best 4 subjects to half the tertiary entrance points for the 5<sup>th</sup> best subject.</li> <li>• Obtain total out of 90. This is the university aggregate score.</li> <li>• Calculate percentage of students at least each university aggregate score.</li> <li>• Obtain percentile distribution and corresponding percentile rank (0–100).</li> <li>• Student's percentile rank is her/his TER.</li> </ul> <p><b>TAFE SA entrance</b></p> <p>Eligibility for TAFE SA score: qualified for the SACE Calculated using tertiary entrance points for best 3 scaled full-year (or equivalent) Stage 2 subjects.</p>
<b>INCORPORATION OF VET</b>	
<p>VET units of competency from all nationally accredited certificates and diplomas can contribute towards the SACE, either through embedding in SACE subjects, or in a block credit fashion, or through SSABSA-VET subjects. SSABSA-VET subjects can count towards TER if student fulfils requirements for all four assessment components (Evidence Folio, Record of Attainment, Workplace Reflection and Work Project). Results, which are moderated, are reported as a grade, verbal description, Subject Achievement Score, and tertiary entrance points.</p>	
<b>CURRICULUM</b>	
<b>Underpinning curriculum principles</b>	Each student develops knowledge and skills, and explores attitudes and values, to participate in and shape local and global communities.

	<p>Each student has opportunities to learn both independently and collaboratively, to think creatively and critically, and to communicate effectively.</p> <p>Each student has access to a broadly based and challenging curriculum that is an effective preparation for lifelong learning in continuing education, training, and work.</p> <p>Each student has access to curriculum and assessment that acknowledge prior learning experiences, support diverse aspirations, and provide for a range of learning styles.</p> <p>Each student has access to curriculum and assessment which is motivating, challenging, and enriching, and which supports individual success.</p> <p>Each student's achievements are assessed fairly, validly, and reliably, and are reported accurately and comprehensively.</p>
<b>Premises/value statements</b>	<p>The SACE pattern is consistent with and contributes to the development of the goals of <i>The Adelaide Declaration on National Goals for Schooling in the 21<sup>st</sup> Century</i>.</p> <p>All areas of the SACE curriculum and its related assessment processes provide opportunities for all students to respond to challenging learning opportunities, to pursue excellence, to be successful, and to acquire a diverse range of skills and learning.</p> <p>The stated aims of the SACE represent the formal agreement of the stakeholders on the purposes of senior secondary curriculum, assessment, and certification.</p> <p>All areas of the SACE curriculum and its related assessment processes ensure that students are active participants in the learning process and have opportunities to influence the ways in which they learn.</p> <p>Social change and stability affect the construction and delivery of the senior secondary curriculum and its assessment.</p> <p>No curriculum is values-neutral, and therefore curriculum work undertaken by the Board should involve the exploration and evaluation of the values on which it is based. At the same time, students have the opportunity to explore their own attitudes and values in the context of the content selected and classroom delivery.</p> <p>Learning is a lifelong process in which senior secondary education plays a vital role.</p> <p>The education community shares responsibility for equipping its citizens for effective participation in Australian democratic society within a world context. SSABSA has a commitment to a philosophy of flexibility, diversity, and innovation in learning and assessment.</p> <p>SSABSA's role in the management of the SACE curriculum, assessment, and certification is based on cooperative partnerships among all of the stakeholders.</p> <p>SSABSA's role in the management of the SACE curriculum,</p>

	assessment, and certification occurs within the parameters defined by the legislation.
<b>Areas of study</b>	—
<b>Structure of curriculum document</b>	<p><i>Curriculum Statement: Part 1</i></p> <p>Rationale Advice for students Goals Strands Learning outcomes Structure and organisation Scope Assessment Assessment components Criteria for judging performance Moderation</p> <p><i>Curriculum Statement: Part 2</i></p> <p>Support materials: Illustrative programs Teaching and learning strategies Assessment plans Performance standards Annotated work samples Resources</p>
<b>Curriculum development</b>	<p>Underpinned by community consultation, comprising:</p> <ul style="list-style-type: none"> <li>• research</li> <li>• drafting</li> <li>• accreditation</li> <li>• implementation</li> <li>• monitoring</li> <li>• auditing.</li> </ul> <p>Similar quality assurance processes applied to all curriculum statements.</p> <p>Once accredited, available to all organisations licensed to deliver the SACE.</p> <p>Accreditation of curriculum and assessment is a legislative function of the Board. It delegates responsibility for the accreditation of curriculum statements, and subsequent changes to curriculum statements, to the Curriculum and Assessment Policy Committee (CAPC), a Board sub-committee.</p> <p>The Board approves all policies related to the accreditation of curriculum statements.</p> <p>Every three years, the Board systematically reviews its subject offerings. It canvasses, via written submission and/or questionnaire, the views on possible amalgamations, deletions, and/or additions to the overall subject offerings from all the nominating agencies and schools. The criteria upon which the reviews are conducted are identical to those used by the Board to consider requests from schools, institutions, and other authorities, viz:</p> <ul style="list-style-type: none"> <li>• increase in participation in the SACE</li> <li>• demand and support for the subject</li> </ul>

	<ul style="list-style-type: none"> <li>• overlap with existing subjects</li> <li>• resource impact on schools and SSABSA.</li> </ul>
<b>Standards setting/maintenance</b>	<p>Assessment Standards Support Process</p> <ul style="list-style-type: none"> <li>• works through assessment standards support panels;</li> <li>• provides support and guidance to teachers on their assessment standards;</li> <li>• does not seek to provide comment on the appropriateness of teachers to classes, or the pedagogy employed by teachers in the delivery of the subject;</li> <li>• seeks to ensure a common understanding of the assessment criteria through inspection of marked student work, and approval of assessment plans, assessment tasks and teaching programs (some subjects only).</li> </ul> <p>Where framework curriculum statements are used, teachers may be required to submit teaching programs (the assessment standards support process provides advice on programming).</p>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	School marks count for 100% at Stage 1 and 50–100% at Stage 2.
<b>External</b>	No external examinations at Stage 1 of the SACE. At Stage 2, some subjects have external examinations; others are assessed using other tasks such as practicals and research work.
<b>Standardised testing</b>	—
<b>Modes that contribute to high-stakes assessment</b>	<p>A variety of writing-based, oral, practical and performance assessments with a recent increase in other methods (e.g. roundtable assessment and portfolio assessment).</p> <p>For majority of SACE subjects the required number of assessment components is prescribed. Assessment tasks within assessment components are negotiable; range of components not negotiable, except through special provisions in assessment in limited circumstances.</p>
<b>MODERATION</b>	
<b>Type</b>	Statistical and non-statistical
<b>Purpose</b>	To validate marking standards
<b>Process</b>	<ol style="list-style-type: none"> <li>1. Central moderation: Schools submit student materials and results sheets to a SSABSA central venue for validation of marks by a SSABSA moderation panel led by a Chief Assessor.</li> <li>2. Group moderation: Teachers take student materials to meetings of a group of subject teachers. SSABSA moderator guides teachers in validating marking standards. Where necessary, SSABSA moderation panel led by a Chief Assessor conducts cross-group validations.</li> <li>3. School-based moderation: SSABSA moderators visit the school to view student materials (e.g. practicals and performances), and validate the marking standards of the teachers.</li> <li>4. Statistical moderation: External assessment results are taken as the standard for moderation of those school assessment results not included in central, group, or school-based moderation (i.e. non-statistical) processes.</li> </ol> <p>Statistical moderation only applies to those subjects that have an external examination component. For each subject class group (n at least 3) in a school, the distribution of school</p>

	<p>assessments is transformed to match the average and spread of the external assessments. The new scores thus produced are the moderated scores. Each student's raw score is obtained by adding the external assessment and the moderated school assessment.</p> <p>Some subjects also have a school assessment component that is moderated using a non-statistical process before the components are added together.</p> <p>SSABSA provides in-course standards support moderation (selected subjects) and end-of-course standards validation (all subjects).</p> <p>Assessment Standards Support is designed to guide the teacher's marking standard during the course. All assessment standards support takes the form of non-statistical moderation.</p> <p>Assessment Standards Validation takes place at the end of the course and may involve changes to student results to ensure statewide comparability of marking standards.</p>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	<i>The Inquiry into Immediate Post-Compulsory Education</i> (Gilding, 1986–89) resulted in the introduction of the SACE in 1992–93.
<b>Current revision/ transition arrangements</b>	<p><i>South Australian Certificate of Education (SACE) Review</i> – final report to be released.</p> <p>Term of reference to:</p> <ul style="list-style-type: none"> <li>• identify the characteristics of a relevant and contemporary certificate of education;</li> <li>• develop clear procedures so that students, parents/caregivers, teachers and employers understand the certification process;</li> <li>• provide a mechanism that ensures the continuous improvement of the certificate of education so that it responds to the changing needs of young people and better supports the economic and social development of the State;</li> <li>• advise on requirements for legislative reform.</li> </ul>

<b>TASMANIA</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	Tasmanian Certificate of Education (TCE) (the tertiary entrance statement is a separate document)
<b>Awarding body</b>	Tasmanian Qualifications Authority (TQA)
<b>Requirements</b>	<p>Student has:</p> <ul style="list-style-type: none"> <li>attended senior secondary school (government or accredited non-government school) in Tasmania</li> <li>completed at least one TCE senior secondary study or nationally recognised VET competence or certificate.</li> </ul>
<b>Permissible patterns of subject choice</b>	<p>No compulsory subjects</p> <p>No prescribed patterns of subject choice</p>
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	<p>The <i>Tasmanian Certificate of Education</i>, issued to students when they finish their senior secondary education, shows all achievements.</p> <p><i>Statement of Results</i>, sent to Yr 11 students, shows achievements added to their record during that year.</p> <p><i>Tertiary Entrance Advice</i>, sent to Yr 12 students eligible for tertiary entrance, shows all TCE level 5/HAP subjects satisfactorily undertaken, the score achieved for each subject and their overall tertiary entrance result.</p>
<b>Time-span for certification</b>	No time limits apply.
<b>Nomenclature</b>	<p>The TCE shows senior secondary results recording student's achievements in:</p> <ul style="list-style-type: none"> <li>subjects assessed under TCE senior secondary syllabuses levels 2–5</li> <li>nationally recognised VET certificates and competencies</li> <li>TQA recognised courses (from 2005)</li> <li>University of Tasmania High Achiever Program studies (HAP) (from 2005).</li> </ul> <p>The certificate may also record student's achievements in subjects assessed under:</p> <ul style="list-style-type: none"> <li>TCE secondary syllabuses (before 2005)</li> <li>TCE 1 syllabuses (syllabuses not assigned to a level)</li> <li>School developed courses.</li> </ul> <p>In a TCE syllabus/TQA accredited course a successful student receives one of the following awards:</p> <p>EA - Exceptional Achievement  HA - High Achievement  CA - Commendable Achievement  SA - Satisfactory Achievement  PA - Preliminary Achievement.</p> <p>Senior secondary results can also include:</p> <ul style="list-style-type: none"> <li>VET competencies and certificates using the nationally recognised terminology</li> <li>TQA recognised courses using nomenclature defined by awarding body.</li> </ul>
<b>TERTIARY ENTRANCE</b>	
<b>Selection mechanism</b>	Selection of eligible Yr 12 students is based on tertiary

	entrance result. There are other pathways for non-Yr 12 students.
<b>Eligibility</b>	A student in Tasmania who has completed at least four level 5 subjects, with at least three from Yr 12 is eligible for a TER that year. The calculation is based on the best five (equivalent – HAP subjects are half the size of TCE level 5 subjects) results. Subjects cannot be counted twice.
<b>Combining results for tertiary entrance</b>	<p>TQA in collaboration with the University of Tasmania calculates the TER. Rasch Analysis (a form of IRT) is used to estimate the relative 'difficulty' of each award in each level 5 subject. The 'test items' in this case are the subject assessments and the underlying characteristic that is being estimated is 'general academic ability' of students. The relative estimated difficulties are adjusted so that the weighted average values for the CA and the EA award remain the same from year to year. Estimates for HAP results are linked to the estimates for TCE level 5 subjects.</p> <p>A (scaled) score is then calculated for each subject result. These range from at least 1 to 21+ approx.</p> <p>The TER is calculated by adding the three best (scaled) subject scores from level 5 subjects satisfactorily completed in Yr 12 (or a subsequent year), together with the next best two (equivalent) other subject scores taken from either the same year, or any other single year after Yr 10.</p> <p>The Tasmanian TER is determined from a ranking based on the tertiary entrance scores (using a method agreed to by all States) as a percentile ranking of students from the total age cohort.</p>
<b>INCORPORATION OF VET</b>	
Tasmanian senior secondary students complete nationally recognised VET competencies and certificates, including on-the-job training as required by Training Packages, with RTOs registered with TQA. Schools may be RTOs. Senior secondary students' results (competencies and certificates) in VET also appear on their TCEs.	
<b>CURRICULUM</b>	
<b>Underpinning curriculum principles</b>	<p>TCE syllabuses/TQA accredited course frameworks must:</p> <ul style="list-style-type: none"> <li>• be distinguishable by their unique content</li> <li>• be developed only where there is a clearly established demand</li> <li>• support current best practice in pedagogy</li> <li>• have assessment procedures and pedagogy which will maximise students opportunities for participation and success</li> <li>• be relevant to students' experience and abilities, connect with previous and continuing education, and provide for general and vocational education pathways</li> <li>• relate learning to its social context and use and, where relevant, focus on authentic application</li> <li>• specify the standards for the criteria on which assessment is to be based;</li> <li>• take into account equity and cross-curricular issues including gender, disability, aboriginality, ethnicity, socio-economic disadvantage and geographical isolation.</li> </ul>

	<p>TCE syllabuses must include TCE Generic Criteria (number according to the design time of the syllabus, standards according to level of the syllabus). These identify the degree to which a student can:</p> <ul style="list-style-type: none"> <li>• collect and categorise information</li> <li>• communicate ideas and information</li> <li>• plan, organise and complete activities</li> <li>• work constructively with others</li> <li>• examine and resolve issues</li> <li>• select and use technologies</li> <li>• select and use mathematical ideas and techniques.</li> </ul> <p>TQA's senior secondary syllabuses/course frameworks must connect with Tasmania's K–10 Essential Learnings Framework, and provide a logical curriculum progression for all students.</p>
<b>Premises/value statements</b>	<p>Syllabuses must be consistent with, and aim to realise, <i>The Adelaide Declaration on National Goals for Schooling in the Twenty-First Century</i>.</p> <p>TQA's principles and practices draw on the vision and strategies set out in <i>Learning Together</i> and <i>Tasmania Together</i>.</p> <p>Schools and colleges must ensure that all students have equitable access to the benefits of education irrespective of their sex, culture, linguistic background, race, location, socio-economic background or disability. They must pursue equity for all students but should focus especially on those groups of students who are known to gain significantly less from their education than the population as a whole.</p> <p>Syllabuses must take into account cross-curricular issues centred around:</p> <p><i>Equity</i> (the principles described in the National Strategy of Equity in Schooling),  Civics &amp; Citizenship, Aboriginal studies, Career Education and Work Related studies, Cultural Diversity, gender, literacy, numeracy, and providing for students with special needs.</p>
<b>Areas of study</b>	—



<b>Structure of curriculum document</b>	<p><b>TCE syllabus</b></p> <ul style="list-style-type: none"> <li>• Learning statement</li> <li>• Syllabus description</li> <li>• Syllabus outline</li> <li>• Strands</li> <li>• Planned learning sequences</li> <li>• Work expectations</li> <li>• Recommended pathways</li> <li>• Assessment</li> <li>• Accreditation</li> <li>• Version history</li> <li>• Criteria standards</li> </ul> <p><b>TQA accredited course framework</b></p> <ul style="list-style-type: none"> <li>• Rationale</li> <li>• Size</li> <li>• Level/complexity</li> <li>• Aims/purposes</li> <li>• Learning Outcomes</li> <li>• Access requirements</li> <li>• Resource requirements</li> <li>• Guidelines for developing learning designs</li> <li>• Assessment (including standards)</li> <li>• Qualification</li> </ul>
<b>Curriculum development</b>	<p><b>TCE syllabuses</b></p> <p>New TCE syllabuses and syllabuses undergoing review are normally developed over four years for an accreditation period of up to five years.</p> <ul style="list-style-type: none"> <li>• Learning area overview where decisions on broad directions, including syllabus deletions, mergings and substitutions are planned;</li> <li>• Syllabus writing/consultation – up to 18 months;</li> <li>• Accreditation for the following year;</li> <li>• Evaluation during first year of implementation and refinements as required.</li> </ul> <p><b>TQA accredited course frameworks</b></p> <p>Two TQA course frameworks were developed during the second half of 2005 for implementation on a trial basis in selected schools in 2006 with evaluation by independent evaluators. The courses were developed in partnership with schools/colleges with advice from independent experts about course content, assessment, standards and quality assurance mechanisms.</p>

<b>Standards setting/maintenance</b>	<p><b>TCE syllabuses</b></p> <p>All TCE senior secondary syllabuses use criterion-based assessment.</p> <p>For each criterion (generic and subject specific) there are specific standards ranging over the levels of difficulty (i.e. levels 2–5) for which the syllabus has been provided. At each level there are three sub-sets of descriptors, distinguished by the ratings labelled <i>C</i>, <i>B</i> or <i>A</i>. The descriptors define the minimum requirement for achievement of the rating.</p> <p>A student's final award is determined from the profile of ratings.</p> <p><b>TQA accredited course frameworks</b></p> <p>The standards are defined in terms of a template that relates <i>required features of achievement</i> and the <i>awards</i> – EA, HA, CA, SA, PA. Each feature is a continuum. <i>Benchmarks</i> placed on each feature help to define the feature and to show the relationship of achievement on this feature and the final award. The final decision about an award is an on-balance decision, taking into account rules listed on the template. The template provides both a description of the standards and a tool for making and recording the assessment decisions.</p>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	<p>The TQA approves students' internal assessments if schools ensure that:</p> <ul style="list-style-type: none"> <li>the course of study complies with the syllabus statement, that all criteria are addressed, that specified content is covered, and that the broad objectives of the syllabus are reflected in the teaching and assessment;</li> <li>each student's performance is assessed on the assessment criteria stated in the syllabus against the standards provided by the TQA for that syllabus;</li> <li>each student's achievement on each criterion is given a rating of A, B, C at the end of the course of study;</li> <li>the school complies with all moderation requirements for the syllabus.</li> </ul>
<b>External</b>	<p>All TCE level 5 syllabuses include an external assessment component, where students are assessed on half of the criteria stated in the syllabus. Students' performances on these externally assessed criteria are summarised as a rating of A, B and C.</p> <p>Final awards are determined from the combined set of internal rating and external rating, using the award rules that are stated in the syllabus.</p> <p>TQA accredited course frameworks at levels 3 and 5 include external quality assurance of the assessment and standards.</p>
<b>Standardised testing</b>	<p>—</p>
<b>Modes that contribute to high-stakes assessment</b>	<p>TQA level 5 subjects, UTAS HAP subjects</p>

<b>MODERATION</b>	
<b>Type</b>	<p>There are two components of TCE syllabus moderation.</p> <p>Major emphasis is placed on consensus moderation: the process of attaining comparability in the assessment of student achievement.</p> <p>The second moderation component is statistical monitoring, where the TQA makes determinations about consistency in awards and takes actions to ensure comparability in assessments where appropriate.</p> <p>TQA accredited course frameworks specify an external TQA panel review of learning designs and assessment standards as shown in the evidence of student work.</p>
<b>Purpose</b>	Statewide comparability of standards and consistency with syllabus/course standards minimum requirements.
<b>Process</b>	<p>Consensus (as of 2005):</p> <p>Particular criteria (usually one or two), and tasks appropriate for assessing these criteria, are selected for moderation each year. One meeting of at least one teacher from each school offering the syllabus is held in March to decide tasks. A second meeting in September is held to examine examples of assessments to the particular descriptors of the selected criteria.</p> <p>Internal school moderation meetings are held to ensure that all teachers of the syllabus are fully informed of the requirements of and results from the moderation meetings.</p> <p>The TQA may reject a school's final ratings or adjust them if there is evidence to justify such action, for example, if:</p> <ul style="list-style-type: none"> <li>• assessment procedures have not been followed; or</li> <li>• moderation consensus recommendations have been rejected.</li> </ul> <p>Analysis:</p> <p>TCE level 5 syllabuses have an external assessment component. Half of the assessment criteria are assessed both by internal process and by one or more external instruments. The two assessments against the same criteria are analysed. Class and school variations greater than those commonly observed are identified and discussed with school leaders. Strategies for rectification are identified by schools. Monitoring the following year is undertaken to determine the effectiveness of the strategy.</p>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	<p><i>Tasmania Together</i> (2003); <i>Learning Together</i> (2000)</p> <p>The TQA, which was first established in 2004 as part of the strategies and policies in these reviews, works in three sectors – senior secondary, VET and (non-self-accrediting) higher education.</p>
<b>Current revision/transition arrangements</b>	<p>In 2005, TQA developed</p> <ul style="list-style-type: none"> <li>• criteria and processes for recognising achievement in formal learning other than TCE and VET (results will appear on certificates in 2005)</li> <li>• alternative models for course accreditation, one of which was used in 2005</li> </ul>

	<ul style="list-style-type: none"> <li>• trials of evidence-based procedures for reviewing statewide comparability of internal assessment.</li> </ul> <p>TQA is consulting with schools, students, parents, employers and other stakeholders about the minimum requirements for a proposed senior secondary completion/graduation certificate to be a requirement for students starting Yr 11 in 2007.</p> <p>TQA is collaborating with the University of Tasmania in the development of a generalised approach to the tables and schedules that support tertiary entrance. This will permit fair and efficient recognition of achievement in a wider range of studies.</p> <p>The Department of Education is involving all three school sectors in the development of a framework for the Post-Yr 10 curriculum. TQA is developing approaches to course accreditation/quality assurance that will facilitate the implementation of this framework.</p>
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<b>VICTORIA</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	Victorian Certificate of Education (VCE) Victorian Certificate of Applied Learning (VCAL), an alternative to the VCE
<b>Awarding body</b>	Victorian Curriculum and Assessment Authority (VCAA)
<b>Requirements</b>	<ul style="list-style-type: none"> <li>• Satisfactorily complete at least 16 units</li> <li>• Can include VET</li> <li>• Regardless of total number of units, must satisfactorily complete at least 3 from: <ul style="list-style-type: none"> <li>– Foundation English Units 1, 2</li> <li>– English/ESL Units 1–4</li> <li>– English Language Units 3, 4</li> <li>– Literature Units 3, 4</li> </ul> </li> <li>• Cannot count &gt; 2 units from the following: English/ESL Units 1, 2; Foundation English Units 1, 2</li> <li>• Three sequences of Units 3 and 4 studies in addition to the sequence chosen for compulsory English. These sequences can be from VCE studies and/or VCE VET programs.</li> </ul>
<b>Permissible patterns of subject choice</b>	As above. Also, VTAC places restrictions on certain combinations of VCE and VET studies.
<b>METHODS OF REPORTING/ CERTIFICATING</b>	
<b>Documentation</b>	Statement of Results VCE Certificate
<b>Time-span for certification</b>	Although designed for Yrs 11 and 12, VCE studies can start in Yr 10 (this is the case with approx. 50% of Victorian Yr 10 students).
<b>Nomenclature</b>	Graded assessments (A <sup>+</sup> , A, B <sup>+</sup> , B, C <sup>+</sup> , C, D <sup>+</sup> , D, E <sup>+</sup> , E) and Study Score (max. 50)
<b>TERTIARY ENTRANCE</b>	
<b>Selection mechanism</b>	ENTER score (a number between 0 and 99.95 in intervals of 0.05).
<b>Eligibility</b>	Student obtains at least 2 graded assessments and S for both Units 3 and 4 in a study.
<b>Combining results for tertiary entrance</b>	<p><b>Calculating the TER</b></p> <p>Assign study scores: Student gets a Study Score on a scale 0–50 (a measure of performance relative to others who took the study). Distribution of study scores (50 max, 0 min) cluster around 30 (for a given study approx. 70% of students get a study scores 23–37).</p> <p>Scale study scores to obtain ENTER subject scores for each study: For each VCE study, study scores are scaled according to the strength of the competition in that study (strength of competition in a particular study</p>

	<p>is gauged by comparing students' performance in all their other VCE studies with their performance in the particular study). This scaled study score is the ENTER subject score.</p> <p>Aggregate subject scores to obtain the ENTER aggregate: Use maximum of 6 results (up to 3 for VET sequences) in the aggregate. Where &gt; 6 results exist, use the 6 legitimate results yielding the highest aggregate. Add ENTER subject scores according to the following sequence:</p> <ul style="list-style-type: none"> <li>• best subject score for an English study</li> <li>• next best 3 ENTER subject scores (of an allowable combination)</li> <li>• 10% of any fifth and sixth ENTER subject score as/if available</li> </ul> <p>Up to 2 scored VET sequences may be included in the primary four; a third may count as an increment; unscorable VET sequences may count as the fifth and/or sixth increment by adding 10% of the average of the primary four; the increment for the sixth study may be for an approved university study as part of the VCE extension study program.</p> <p>ENTER aggregate is between 0 and 210+.</p> <p>Rank all eligible students according to their ENTER aggregates.</p> <p>Assign a percentile rank that (as far as possible) distributes the students evenly (although ties might result in an increase in the number of students assigned a certain percentile rank).</p> <p>Convert the percentage rank to an ENTER, using a method agreed to by all States (except Qld).</p> <p>ENTER, a number between 0 and 99.95 in intervals of 0.05, is thus an estimate of a student's relative position in her/his age-group, having taken account of students who have moved or left school before Year 12.</p>
<b>INCORPORATION OF VET</b>	
Of the 90+ VCE studies, 30 are VET programs that also provide a nationally recognised industry qualification, some of which count towards the ENTER for tertiary entrance. Most other VCE VET programs also count.	
<b>CURRICULUM</b>	
<b>Underpinning curriculum principles</b>	<ul style="list-style-type: none"> <li>• Maximising curriculum connections and pathways</li> <li>• Promoting democratic and community values</li> <li>• Balancing standards with individual needs</li> <li>• Combining contemporary understanding</li> </ul>

	and skills with enduring knowledge
<b>Premises/value statements</b>	<p>Valued features include:</p> <ul style="list-style-type: none"> <li>• high level of literacy</li> <li>• democratic values</li> <li>• recognition and respect for the diversity of the Australian society and the diverse backgrounds of students</li> <li>• broad social values and community standards</li> <li>• active participation in the broader community</li> <li>• responsibility for shaping their own lives.</li> </ul>
<b>Areas of study</b>	<p>VCE studies; Units in areas of study.</p> <p>A VCE study is defined in terms of a clear body of valued knowledge and skills which builds on work done in Years P–10 and prepares students for any further study they may wish to undertake in the area.</p>
<b>Structure of curriculum document</b>	<p><b>Study Design</b></p> <p>Variations on:</p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Rationale</li> <li>• Aims</li> <li>• Structure</li> <li>• Entry</li> <li>• Duration</li> <li>• Prescribed texts</li> <li>• Changes to the study design</li> <li>• Monitoring for quality</li> <li>• Safety</li> <li>• Use of information technology</li> <li>• Community standards</li> <li>• Assessment and reporting</li> <li>• Satisfactory completion</li> <li>• Authentication</li> <li>• Levels of achievement</li> <li>• Units</li> </ul>
<b>Curriculum development</b>	<p>All VCE studies and VCE VET programs must be approved by the Authority of the VCAA and accredited by the VQA.</p> <p>Guidelines of the development, review and approval of VCE studies include the following criteria:</p> <ul style="list-style-type: none"> <li>• minimum enrolment</li> <li>• resourcing the study</li> <li>• assessment expertise</li> <li>• defining a VCE study</li> <li>• standards and benchmarks</li> <li>• period of approval</li> <li>• overlap</li> <li>• duplication</li> <li>• ICT</li> <li>• study design.</li> </ul> <p>Procedures for the review and approval of VCE studies:</p> <p>VCA manages procedures for review, development and approval.</p> <p>Study Review Committee or Study Writing</p>

	<p>Team reviews and develops VCE studies. Stages in work of Study Review Committee relate to:</p> <ul style="list-style-type: none"> <li>• Terms of reference (includes appropriateness of assessment program)</li> <li>• Establishment of committee</li> <li>• Meeting procedures</li> <li>• Timeline and stages in review and approval (more details below)</li> <li>• Task definition</li> <li>• Period of approval (12 months notice of implementation, accredited for 4 yrs)</li> <li>• Evaluation</li> <li>• Consultation</li> <li>• Independent review</li> </ul> <p>There is similar detail for the work of a Study Writing Team.</p>
<b>Standards setting/maintenance</b>	<p>According to <i>Curriculum and assessment principles and standards for VCE studies</i>. Also, examination panels report on distribution of grades for examination assessment and statistical moderation of coursework.</p>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	<p>There are two forms of graded school assessment - Coursework and School-assessed Tasks. The form/s of school assessment and their weighting are specified for each study and are to be found in the Study Design. For each coursework component, the Study Design specifies a range of assessment tasks for assessing the achievement of the unit outcomes. School-assessed Tasks occur in studies where products and models are assessed (Art, Media etc.).</p>
<b>External</b>	<p>External examinations (written, oral, performance and electronic) are set and marked by VCAA.</p>
<b>Standardised testing</b>	<p>General Achievement Test (GAT): a test of general knowledge and skills in:</p> <ul style="list-style-type: none"> <li>• written communication</li> <li>• mathematics, science and technology</li> <li>• humanities, the arts and social sciences.</li> </ul> <p>See Appendix 3 for more details on the design of the GAT. Used for statistical moderation (see below); this is quality assurance of a predictive nature.</p>
<b>Modes that contribute to high-stakes assessment</b>	<p>Go to 'Internal' and 'External' above.</p>
<b>MODERATION</b>	
<b>Type</b>	<p>Statistical</p>
<b>Purpose</b>	<p>To ensure that schools' coursework assessments are comparable across the State and fair to all students</p>
<b>Process</b>	<p>The level and spread of each school's</p>



	<p>assessments of its students in each study is compared with the level and spread of the same students' scores in the external examinations. School scores are adjusted if necessary.</p> <p>In some studies, students' GAT scores (as well as their examination scores) are used for comparison purposes; specifically where GAT is a better match with schools' coursework assessments throughout the State. External examination scores, however, are the major influence in statistical moderation.</p> <p>For course work (7 studies), the GAT is used to check each school's assessments for School-assessed Tasks in Art, Design &amp; Technology, Food &amp; Technology, Media, Studio Arts, Systems &amp; Technology, and Visual Communication &amp; Design. In the case of a school's assessments for a particular School-assessed Task being significantly higher or lower than predicted by students' GAT scores, reviewers from VCAA visit the school to look at the corresponding work.</p>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	—
<b>Current revision/ transition arrangements</b>	—

<b>WESTERN AUSTRALIA</b>	
<b>FORMALITIES</b>	
<b>State Certificate of Education</b>	WA Certificate of Education (WACE)
<b>Awarding body</b>	Curriculum Council of Western Australia
<b>Requirements</b>	<p>Student must have:</p> <ul style="list-style-type: none"> <li>met the assessment requirements in at least 20 course units (including at least three 2-unit combinations), of which up to 8 units can be Council-endorsed (i.e. Structured Workplace Learning, VET units of competency, extracurricular or community-based units or university units);</li> <li>achieved to an average Level 4 on outcomes from at least 5 courses (alternatively, 4 courses if 8 Curriculum Council-endorsed units are included);</li> <li>met the requirement for English Language Competence;</li> <li>completed 4 units from an English course;</li> <li>included all 13 Overarching Outcomes in their course selections;</li> <li>completed 20 hr approx. of voluntary service.</li> </ul>
<b>Permissible patterns of subject choice</b>	As above. Schools to offer courses from approximately 50 available, chosen to match student interests and needs within school resources. Typically, students choose at least 5 courses of study, including 1 from English area (English, ESL, or Texts, Traditions & Cultures).
<b>METHODS OF REPORTING/CERTIFICATING</b>	
<b>Documentation</b>	<p><b>Folio of Achievement</b></p> <p>WACE (if attained)</p> <p><i>Record of Achievement:</i> Overall summary of student achievement, listing achievement levels in WACE examinations and school assessments for each course, and also listing other achievements such as awards, exhibitions and Council-endorsed units.</p> <p><i>Course Report:</i> Shows the levels achieved for school assessments and WACE examinations for each of the course outcomes.</p>
<b>Time-span for certification</b>	No time limit
<b>Nomenclature</b>	Results from each of school assessment and external examination reported as Course Achievement level/rating (e.g. 6.20).
<b>TERTIARY ENTRANCE</b>	
<b>Selection mechanism</b>	Tertiary Entrance Rank (TER) based on achievement standards in school assessments and WACE examinations
<b>Eligibility</b>	
<b>Combining results for tertiary entrance</b>	<p><b>Calculating the TER (tentative process)</b></p> <p>For each Course of Study combine the internal and external outcome Levels of Achievement on a 50:50 basis to produce a final Course of Study Level of Achievement (CSLA).</p> <p>Combine the highest 4 final CSLAs taking into account any unacceptable Course of Study combinations to produce a</p>

	<p>Tertiary Entrance Aggregate (TEA).</p> <p>Convert TEA into a TER taking into account the number of students with a TEA and the total Yr 12 school leaving age population in WA.</p>
<b>INCORPORATION OF VET</b>	
<p>VET versions of 17 courses enable students to achieve a qualification as well as credit towards the WACE. Access to VET available through three options: VET integrated with a course of study, VET as a course of study, and stand-alone VET. All can be undertaken in a school, TAFE setting, or combination thereof.</p>	
<b>CURRICULUM</b>	
<b>Underpinning curriculum principles</b>	<ol style="list-style-type: none"> <li>1. An encompassing view of curriculum</li> <li>2. An explicit acknowledgment of core values</li> <li>3. Inclusivity</li> <li>4. Flexibility</li> <li>5. Integration breadth and balance</li> <li>6. A developmental approach</li> <li>7. Collaboration and partnerships.</li> </ol> <p>(derived from K–12 Curriculum Framework)</p>
<b>Premises/value statements</b>	<p>Through the WACE, students further their achievement of the K–12 Curriculum Framework's 13 Overarching Outcomes (which are inclusive of key competencies):</p> <p><i>Communication</i> Students use language to understand, develop and communicate ideas and information and interact with others.</p> <p><i>Using numerical and spatial concepts</i> Students select, integrate and apply numerical and spatial concepts and techniques.</p> <p><i>Investigating and using information</i> Students recognise when and what information is needed, locate and obtain it from a range of sources and evaluate, use and share it with others.</p> <p><i>Using technologies</i> Students select, use and adapt technologies.</p> <p><i>Thinking critically</i> Students describe and reason about patterns, structures and relationships in order to understand, interpret, justify and make predictions.</p> <p><i>Exploring ideas, opportunities and solutions</i> Students visualise consequences, think laterally, recognise opportunity and potential, and are prepared to test options.</p> <p><i>Using scientific understandings</i> Students understand and appreciate the physical, biological and technological world and have the knowledge and skills to make decisions in relation to it.</p> <p><i>Active Australian citizenship</i> Students understand their cultural, geographic and historical contexts and have the knowledge, skills and values necessary for active participation in life in Australia.</p> <p><i>Cultural interaction</i></p>

	<p>Students interact with people and cultures other than their own and are equipped to contribute to the global community.</p> <p><i>Engaging in creative activity</i> Students participate in creative activity of their own and understand and engage with the artistic, cultural and intellectual work of others.</p> <p><i>Valuing personal growth and wellbeing</i> Students value and implement practices that promote personal growth and wellbeing.</p> <p><i>Learning independently and collaboratively</i> Students are self-motivated and confident in their approach to learning and are able to work individually and collaboratively.</p> <p><i>Recognising rights and behaving responsibly</i> Students recognise that everyone has the right to feel valued and be safe, and, in this regard, understand their rights and obligations and behave responsibly. The core-shared values of the Curriculum Framework are also part of the learning opportunities provided for students in the WACE. These are values related to:</p> <ul style="list-style-type: none"> <li>• A pursuit of knowledge and a commitment to achievement of potential</li> <li>• Self acceptance and respect of self</li> <li>• Respect and concern for others and their rights</li> <li>• Social and civic responsibility</li> <li>• Environmental responsibility.</li> </ul>
<b>Areas of study</b>	To be confirmed for new WACE
<b>Structure of curriculum document</b>	<p>Each course describes what students know, understand, value and are able to do as a result of their learning. It contains:</p> <p><b>Course statement</b></p> <ul style="list-style-type: none"> <li>• Rationale</li> <li>• Course of study outcomes</li> <li>• Scale of achievement for each outcome</li> <li>• Scope of the course of study content, including a range of optional contexts</li> <li>• Units</li> <li>• Teaching, learning and assessment</li> <li>• Indicators of achievement</li> <li>• VET information.</li> </ul>
<b>Curriculum development</b>	<p>Formal process for development and accreditation of courses and their units using Curriculum Council committee processes, with accreditation subject to review every 5 years.</p> <ul style="list-style-type: none"> <li>• Establishing course reference groups to develop the initial conceptual framework of outcomes, standards, content and contexts and provide feedback on the courses as they develop;</li> <li>• Aligning existing subjects to course outcomes, scales and content before the first consultation, with feedback identifying units needing development;</li> <li>• Developing courses using a small writing team working with a member of the secretariat;</li> <li>• Obtaining feedback through reference groups comprising sector and system representatives, a wide range of</li> </ul>

	<p>classroom teachers, and other experts;</p> <ul style="list-style-type: none"> <li>• Consulting widely in early developmental stages for each course statement;</li> <li>• Action research to test the preliminary drafts of each new course;</li> <li>• Endorsing course statements through the Post-compulsory Education Committee processes.</li> </ul>
<b>Standards setting/maintenance</b>	<p>Standards identified in the scales of achievement are derived from the K–12 Curriculum Framework Progress Maps.</p> <p>Typically, each course of study has 4 outcomes (e.g. reading, writing, speaking/listening and viewing for English).</p> <p>For each outcome, student achievement is to be assessed against 5 clearly defined levels (4–8). The higher levels show higher standards of achievement at increasing degrees of complexity.</p>
<b>ASSESSMENT ARRANGEMENTS</b>	
<b>Internal</b>	Internal assessment counts for 50% of final result where students undertake the external assessment. If not, then it counts for 100% of the final result.
<b>External</b>	All courses have an external examination, the WACE Examination. Only those students intending to seek selection for university are required to sit for the WACE exams. External assessment counts for 50% of final result.
<b>Standardised testing</b>	—
<b>Modes that contribute to high-stakes assessment</b>	School-managed assessment is to be comprehensive, including evidence of achievement that cannot readily be obtained through an external assessment process (e.g. practical investigations, laboratory activities, and enriching tasks such as research projects, work projects and work performance).
<b>MODERATION</b>	
<b>Type</b>	<ol style="list-style-type: none"> <li>1) Consensus</li> <li>2) Statistical</li> </ol>
<b>Purpose</b>	<ol style="list-style-type: none"> <li>1) To ensure that the outcomes-focused standards are being applied consistently.</li> <li>2) To ensure that judgments of student achievement from external and internal assessments are comparable.</li> </ol>
<b>Process</b>	<p>(1) For each course, an assessment and moderation panel has responsibility for managing external and school assessment requirements and ensuring that judgments about achievement in both contexts are comparable.</p> <p>Each year, consensus meetings are conducted in a sample of courses (as per negotiation with sectors and systems); anticipated to be essential in first year of full implementation and once again during the 5-year accreditation period.</p> <p>Each year, the Curriculum Council collects samples of student work from selected schools. Assessment and moderation panel views these with the aim of verifying teachers' judgments (this is within-school comparability). Adjustments to teachers' ratings will be made if necessary.</p> <p>(2) Results from external assessments will enable the construction of statistical models for the investigation of any</p>

	<p>systematic bias in school assessments. It is expected that results from school and external assessment will be closely correlated, as they are both assessments of course outcomes. The scales of achievement for course outcomes will provide the external measures for moderation.</p>
<b>MISCELLANEOUS</b>	
<b>Recent reviews</b>	<p><i>Our Youth, Our Future: Post-Compulsory Education Review</i> (November 2001)</p>
<b>Current revision/ transition arrangements</b>	<p>Transition (to new WACE)</p> <p>Requirements for students enrolling in Yr 11 in 2005 and 2006:</p> <p>Completion of at least 10 full-year (or equivalent) Council subjects – for students studying new courses of study, any two units from one of these new courses will count as a subject. Students studying a single unit will count this as a half-subject equivalent. Stand-alone VET may continue to be counted as the equivalent for up to 40% of the 10 subjects.</p> <p>An average grade of C or better in at least 8 full-year (or equivalent) Council subjects with at least 4 of these being at Yr 12 (E code) – current D and E code subjects which produce a grade can continue to be used to satisfy this requirement. Where new courses are studied, the arrangements should be:</p> <p>Any 2-unit combination from a new course of study for which a minimum Level 4 is achieved will be deemed to count as a C equivalent and can therefore be used to reduce the requirement of 8 subjects accordingly; there is no limit to how many new courses can be used to generate such subject equivalents; any such equivalents can be additional to the current arrangement of using up to 2 VET subject equivalents.</p> <p>Any 2-unit combination from a new course of study for which a minimum Level 4 is achieved and which are studied during Yr 12 (irrespective of whether they are 1A/1B; 1B/2A; 2A/2B; 2B/3A or 3A/3B, etc.) can be used to reduce the requirement of 4 x Yr 12 subjects being used in the C-grade average; this equivalence is additional to any VET subject equivalents which will be used.</p> <p>There is no limit to how many new courses of study can be used in the process of equivalence (including as credit for Yr 12 equivalence for the C-average).</p> <p>English Language Competence. Students who study English Literature or ESL will be required to achieve a grade of at least C in the Yr 12 (E code) version of these subjects. Alternatively, students will be able to demonstrate English Language Competence by achieving a satisfactory standard in the English Language Competence Test. Students who are enrolled in the new English course of study will be required to demonstrate average achievement across the four outcomes at Level 4. These students will also be able to sit for the English Language Competence Test if they fail to achieve this level.</p>

## Appendix 9. Standards referenced reporting

# HIGHER SCHOOL CERTIFICATE 2001 Course Report



## Personal Development, Health and Physical Education Sample Student

Assessment Mark 86

Examination Mark 88

State Distribution

A typical performance in this band is demonstrated when a student:

Band 6

100 Demonstrates extensive knowledge and understanding of the range of concepts related to health and physical performance. Comprehensively applies theoretical principles to design and evaluates specific strategies for improving health. Demonstrates a superior understanding of the interrelated roles and responsibilities of individuals, groups and governments in the management and promotion of health. Critically analyses movement and the range of factors that affect physical performance and participation. Provides relevant and accurate examples to justify complex arguments.

HSC Mark 87

90 Clearly expresses ideas that demonstrate a thorough understanding of health and physical performance concepts. Identifies strategies for improving health and discusses the links between individual health behaviour, social issues and community health status. Demonstrates a detailed understanding of the interrelated roles of individuals, groups and governments in the management and promotion of health. Demonstrates an understanding of the interrelationships between the various factors that impact on physical performance. Supports arguments thoroughly by using relevant examples and current information.

Band 5

80 Demonstrates a clear understanding of the broad concepts that impact on personal health and physical performance. Relates strategies for managing the major causes of sickness and death to the contributing risk factors. Demonstrates a sound understanding of the roles of individuals, groups and governments in promoting health. Describes a range of factors that affect the quality of physical performance. Communicates information in a clear and logical way, providing some examples.

Band 4

70 Uses basic definitions and facts when explaining health and physical performance concepts. Identifies the major causes of sickness and death and establishes that a healthy lifestyle is a desirable goal. Demonstrates an understanding of the need for government and community action in relation to promoting health. Identifies some relevant factors that influence physical performance. Provides basic support for the arguments presented.

Band 3

60 Recalls some simple facts and writes brief descriptions. Demonstrates an understanding of elementary terms and recognises simple cause and effect relationships as they apply to health and movement. Outlines some factors affecting health and identifies relevant illness prevention measures. Demonstrates an understanding of general movement principles. Provides limited support for the arguments presented.

Band 2

50

Band 1

0

Student Number: 65487965



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*Jonathan Stanley*  
President

